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Department of Defense Fiscal Year (FY) 2023 Budget Estimates

April 2022



Air Force

Justification Book Volume 1 of 1
Procurement, Space Force

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Air Force • Budget Estimates FY 2023 • Procurement

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Appropriation Language
Fiscal Year (FY) 2023 Budget Estimates
Procurement, Space Force

For construction, procurement, and modification of spacecraft, launch services, and related equipment (including ground control and communication equipment) and training devices; expansion of public and private plants, Government-owned equipment and installation thereof in such plants, erection of structures, and acquisition of land, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes including rents and transportation of things; \$3,629,669,000 to remain available for obligations until September 30, 2027.

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: Procurement, Space Force

Budget Activity	FY 2021 (Base + OCO)	FY 2022 Less Supplementals Enactment	FY 2022 Division B Division C P.L.117-43 Enactment*	FY 2022 Division B P.L.117-70 Enactment**
01. Space Procurement, SF	2,299,102	3,022,126		
02. Spares	1,272	1,282		
Total Procurement, Space Force	2,300,374	3,023,408		

P-123PBP: FY 2023 President's Budget (Total Base Published Version), as of March 25, 2022 at 15:48:45

*Includes enacted funding pursuant to the Extending Government Funding and Delivering Emergency Assistance Act (Public Law 117-43).

**Includes enacted funding pursuant to the Further Extending Government Funding Act (Public Law 117-70).

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Department of the Air Force
FY 2023 President's Budget
Exhibit P-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

25 Mar 2022

Appropriation: Procurement, Space Force

Budget Activity -----	FY 2022 Division A P.L. 117-86 Enactment*** -----	FY 2022 Division N P.L. 117-103 Enactment**** -----	FY 2022 Total Supplemental Enactment -----	FY 2022 Total Enactment -----
01. Space Procurement, SF				3,022,126
02. Spares				1,282
Total Procurement, Space Force				3,023,408

P-123PBP: FY 2023 President's Budget (Total Base Published Version), as of March 25, 2022 at 15:48:45

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Department of the Air Force
FY 2023 President's Budget
Exhibit P-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

25 Mar 2022

Appropriation: Procurement, Space Force

Budget Activity -----	FY 2023 Request -----
01. Space Procurement, SF	3,628,317
02. Spares	1,352
Total Procurement, Space Force	3,629,669

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2021 (Base + OCO)		FY 2022 Less Supplementals Enactment		FY 2022 Division B P.L.117-43 Enactment*		FY 2022 Division B P.L.117-70 Enactment**		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Space Procurement, SF											

Space Procurement, SF											
1	Advanced EHF	A		2,823							U
2	AF Satellite Comm System	A		53,326		39,655					U
3	Counterspace Systems	A		49,155		64,804					U
4	Family of Beyond Line-of-Sight Terminals	A		61,190		36,544					U
5	Wideband Gapfiller Satellites (Space)	A		5,000							U
6	General Information Tech - Space	A		3,299		3,316					U
7	GPSIII Follow On	A	2	597,796	3	852,918					U
8	GPS III Space Segment	A		20,122		84,452					U
9	Global Positioning (Space)	A		2,256		2,274					U
10	HERITAGE TRANSITION	A				13,529					U
11	Spaceborne Equip (Comsec)	A		35,495		46,945					U
12	MILSATCOM	A		15,795		24,333					U
13	SBIR High (Space)	A		145,891		154,526					U
15	Mobile User Objective System	A				45,371					U
16	National Security Space Launch	A	3	996,371	5	1,327,347					U

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2022 Division A P.L. 117-86 Enactment***		FY 2022 Division N P.L. 117-103 Enactment****		FY 2022 Total Supplemental Enactment		FY 2022 Total Enactment		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Space Procurement, SF											
Space Procurement, SF											
1	Advanced EHF	A									U
2	AF Satellite Comm System	A							39,655		U
3	Counterspace Systems	A							64,804		U
4	Family of Beyond Line-of-Sight Terminals	A							36,544		U
5	Wideband Gapfiller Satellites (Space)	A									U
6	General Information Tech - Space	A							3,316		U
7	GPSIII Follow On	A						3	852,918		U
8	GPS III Space Segment	A							84,452		U
9	Global Positioning (Space)	A							2,274		U
10	HERITAGE TRANSITION	A							13,529		U
11	Spaceborne Equip (Comsec)	A							46,945		U
12	MILSATCOM	A							24,333		U
13	SBIR High (Space)	A							154,526		U
15	Mobile User Objective System	A							45,371		U
16	National Security Space Launch	A						5	1,327,347		U

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2023 Request		S e c
			Quantity	Cost	
Budget Activity 01: Space Procurement, SF					

Space Procurement, SF					
1	Advanced EHF	A			U
2	AF Satellite Comm System	A		51,414	U
3	Counterspace Systems	A		62,691	U
4	Family of Beyond Line-of-Sight Terminals	A		26,394	U
5	Wideband Gapfiller Satellites (Space)	A		21,982	U
6	General Information Tech - Space	A		5,424	U
7	GPSIII Follow On	A	2	657,562	U
8	GPS III Space Segment	A		103,340	U
9	Global Positioning (Space)	A		950	U
10	HERITAGE TRANSITION	A		21,896	U
11	Spaceborne Equip (Comsec)	A		29,587	U
12	MILSATCOM	A		29,333	U
13	SBIR High (Space)	A		148,666	U
15	Mobile User Objective System	A		46,833	U
16	National Security Space Launch	A	3	1,056,133	U

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 FY 2023 President's Budget
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 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2021 (Base + OCO)		FY 2022 Less Supplementals Enactment		FY 2022 Division B Division C P.L.117-43 Enactment*		FY 2022 Division B Division B P.L.117-70 Enactment**		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
17	NUDET Detection System	A		6,638		6,690					U
18	PTES HUB	A				7,406					U
19	Rocket Systems Launch Program	A		47,741		30,429					U
20	Space Development Agency Launch	A									U
21	Space Fence	A		11,279							U
22	Space Mods	A		76,046		56,325					U
23	Spacelift Range System Space	A		90,492		93,774					U
Total Space Procurement, SF				2,299,102		3,022,126					
Budget Activity 02: Spares											
Spares											
24	Spares and Repair Parts	A		1,272		1,282					U
Total Spares				1,272		1,282					
Total Procurement, Space Force				2,300,374		3,023,408					

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2022 Division A P.L. 117-86 Enactment***		FY 2022 Division N P.L. 117-103 Enactment****		FY 2022 Total Supplemental Enactment		FY 2022 Total Enactment		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
17	NUDET Detection System	A							6,690		U
18	PTES HUB	A							7,406		U
19	Rocket Systems Launch Program	A							30,429		U
20	Space Development Agency Launch	A									U
21	Space Fence	A									U
22	Space Mods	A							56,325		U
23	Spacelift Range System Space	A							93,774		U
Total Space Procurement, SF									3,022,126		
Budget Activity 02: Spares											

Spares											
24	Spares and Repair Parts	A							1,282		U
Total Spares									1,282		
Total Procurement, Space Force									3,023,408		

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Department of the Air Force
 FY 2023 President's Budget
 Exhibit P-1 FY 2023 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

25 Mar 2022

Appropriation: 3022F Procurement, Space Force

Line No	Item Nomenclature	Ident Code	FY 2023 Request		S e c
			Quantity	Cost	
17	NUDET Detection System	A		7,062	U
18	PTES HUB	A	6	42,464	U
19	Rocket Systems Launch Program	A		39,145	U
20	Space Development Agency Launch	A	3	314,288	U
21	Space Fence	A			U
22	Space Mods	A		73,957	U
23	Spacelift Range System Space	A		71,712	U
Total Space Procurement, SF				3,628,317	
Budget Activity 02: Spares					

Spares					
24	Spares and Repair Parts	A		1,352	U
Total Spares				1,352	
Total Procurement, Space Force				3,629,669	

P-123PBP: FY 2023 President's Budget (Total Base Published Version), as of March 25, 2022 at 15:48:45

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Appropriation 3022F: Procurement, Space Force

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1	01	10	ADV555	Advanced EHF.....	Volume 1 - 1
2	01	10	AFSCOM	AF Satellite Comm System.....	Volume 1 - 5
3	01	10	CTRSPC	Counterspace Systems.....	Volume 1 - 11
4	01	10	FBLOST	Family of Beyond Line-of-Sight Terminals.....	Volume 1 - 19
5	01	10	GAP000	Wideband Gapfiller Satellites (Space).....	Volume 1 - 23
6	01	10	GNRLIT	General Information Tech - Space.....	Volume 1 - 27
7	01	10	GPS03C	GPSIII Follow On.....	Volume 1 - 31
8	01	10	GPSIII	GPS III Space Segment.....	Volume 1 - 43
9	01	10	GPSSPC	Global Positioning (Space).....	Volume 1 - 49
10	01	10	HRTG00	HERITAGE TRANSITION.....	Volume 1 - 51
11	01	10	MCOMSE	Spaceborne Equip (Comsec).....	Volume 1 - 57
12	01	10	MILSAT	MILSATCOM.....	Volume 1 - 61
13	01	10	MSSBIR	SBIR High (Space).....	Volume 1 - 69
15	01	10	MUOS00	Mobile User Objective System.....	Volume 1 - 79
16	01	10	NSSL00	National Security Space Launch.....	Volume 1 - 91
17	01	10	NUDETS	NUDET Detection System.....	Volume 1 - 101

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Appropriation 3022F: Procurement, Space Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
18	01	10	PTES00	PTES HUB.....	Volume 1 - 105
19	01	10	RSLP00	Rocket Systems Launch Program.....	Volume 1 - 109
20	01	10	SDALCH	Space Development Agency Launch.....	Volume 1 - 113
21	01	10	SPCFNC	Space Fence.....	Volume 1 - 117
22	01	10	SPCMOD	Space Mods.....	Volume 1 - 119
23	01	10	SPRNGE	Spacelift Range System Space.....	Volume 1 - 147

Appropriation 3022F: Procurement, Space Force

Line #	BA	BSA	Line Item Number	Line Item Title	Page
24	02	20	SSPARE	Spares and Repair Parts.....	Volume 1 - 157

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

Line Item Title	Line Item Number	Line #	BA	BSA	Page
AF Satellite Comm System	AFSCOM	2	01	10.....	Volume 1 - 5
Advanced EHF	ADV555	1	01	10.....	Volume 1 - 1
Counterspace Systems	CTRSPC	3	01	10.....	Volume 1 - 11
Family of Beyond Line-of-Sight Terminals	FBLOST	4	01	10.....	Volume 1 - 19
GPS III Space Segment	GPSIII	8	01	10.....	Volume 1 - 43
GPSIII Follow On	GPS03C	7	01	10.....	Volume 1 - 31
General Information Tech - Space	GNRLIT	6	01	10.....	Volume 1 - 27
Global Positioning (Space)	GPSSPC	9	01	10.....	Volume 1 - 49
HERITAGE TRANSITION	HRTG00	10	01	10.....	Volume 1 - 51
MILSATCOM	MILSAT	12	01	10.....	Volume 1 - 61
Mobile User Objective System	MUOS00	15	01	10.....	Volume 1 - 79
NUDET Detection System	NUDETS	17	01	10.....	Volume 1 - 101
National Security Space Launch	NSSL00	16	01	10.....	Volume 1 - 91
PTES HUB	PTES00	18	01	10.....	Volume 1 - 105
Rocket Systems Launch Program	RSLP00	19	01	10.....	Volume 1 - 109
SBIR High (Space)	MSSBIR	13	01	10.....	Volume 1 - 69
Space Development Agency Launch	SDALCH	20	01	10.....	Volume 1 - 113

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Line Item Title	Line Item Number	Line #	BA	BSA	Page
Space Fence	SPCFNC	21	01	10..... Volume 1 - 117	
Space Mods	SPCMOD	22	01	10..... Volume 1 - 119	
Spaceborne Equip (Comsec)	MCOMSE	11	01	10..... Volume 1 - 57	
Spacelift Range System Space	SPRNGE	23	01	10..... Volume 1 - 147	
Spares and Repair Parts	SSPARE	24	02	20..... Volume 1 - 157	
Wideband Gapfiller Satellites (Space)	GAP000	5	01	10..... Volume 1 - 23	

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Air Force • Budget Estimates FY 2023 • Procurement
 Exhibit P-1M, Procurement Programs - Modification Summary
 (Listing by Model)

Lookup Matrix by Model

Model:	10.3	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
10.3	Counter Communications System (CCS) Meadowlands Production	No

Model:	CCS-C	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
1	Heritage Transition	No

Model:	SBIRS	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
1	SBIRS Mobile System & Fixed Comm Electronics Upgrades	No

Model:	None	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
1	Mobile User Objective System	No

Model:	Blackhawk and IIR Flight Nav Systems	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
1	NAVSTAR GPS-OCS COTS UPGRADE	No

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Air Force • Budget Estimates FY 2023 • Procurement
 Exhibit P-1M, Procurement Programs - Modification Summary
 (Listing by Model)

Model:	NORADCheyenneMountainComplex		
Modification P-40a Aggregated Items Title:	Cheyenne Mountain Complex		
Item Number	Item Title		Applies to Multiple Models
Uncategorized			
NCMCB4	NORAD Cheyenne Mountain Complex Block 04		No
NCMCB5	Block 05		No

Model:	NA		
Modification P-40a Aggregated Items Title:	Ballistic Missile Early Warning		
Item Number	Item Title		Applies to Multiple Models
Uncategorized			
BMEWS-1	BPP Block 02		No
Modification P-40a Aggregated Items Title:	Submarine-Launched Ballistic Missile		
Item Number	Item Title		Applies to Multiple Models
Uncategorized			
PARCSB1	PARCS Block 01		No
P-3a Individual Modifications			
Modification Number	Modification Title		Applies to Multiple Models
1	PARCS Block 02		No

Model:	TBD		
Modification P-40a Aggregated Items Title:	Ballistic Missile Early Warning		
Item Number	Item Title		Applies to Multiple Models
Uncategorized			

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Air Force • Budget Estimates FY 2023 • Procurement
 Exhibit P-1M, Procurement Programs - Modification Summary
 (Listing by Model)

Model:	TBD		
Modification P-40a Aggregated Items Title:	Ballistic Missile Early Warning		
Item Number	Item Title	Applies to Multiple Models	
BMEWS-3	DPSP	No	

Model:	WMN		
Modification P-40a Aggregated Items Title:	Space Lift Range System Modifications		
Item Number	Item Title	Applies to Multiple Models	
Uncategorized			
02-WMN	Western Range Modernization of Network (WMN)	No	

Model:	RCDM		
Modification P-40a Aggregated Items Title:	Space Lift Range System Modifications		
Item Number	Item Title	Applies to Multiple Models	
Uncategorized			
03-RCDM	Range Command Destruct Modernization (RCDM)	No	

Model:	RCF		
P-3a Individual Modifications			
Modification Number	Modification Title	Applies to Multiple Models	
1	Range Communications Facility (RCF)	No	

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 Exhibit P-1M, Procurement Programs - Modification Summary
 (Funding for Modifications)

Funding (\$ M)

Modification P-40a Item Title P-3a Modification Title	PYS	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027
Exhibit P-40a										
NORAD Cheyenne Mountain Complex Block 04	-	2.115	0.200	-	-	-	-	-	-	-
Block 05	-	-	1.922	-	-	-	-	-	-	-
BPP Block 02	-	4.439	-	-	-	-	-	-	-	-
DPSP	-	4.000	-	-	-	-	-	-	-	-
PARCS Block 01	-	0.798	-	-	-	-	-	-	-	-
Western Range Modernization of Network (WMN)	-	1.981	3.409	1.745	-	1.745	0.023	-	-	-
Range Command Destruct Modernization (RCDM)	-	3.768	1.071	-	-	-	-	-	-	-
Exhibit P-3a										
Counter Communications System (CCS) Meadowlands Production	0.000	44.167	59.793	57.498	0.000	57.498	67.320	4.301	2.071	2.125
Heritage Transition	0.000	0.000	13.529	21.896	0.000	21.896	17.140	13.411	10.260	9.067
SBIRS Mobile System & Fixed Comm Electronics Upgrades	0.000	19.252	8.079	38.225	0.000	38.225	28.366	0.000	0.000	-
Mobile User Objective System	0.000	0.000	45.371	46.833	0.000	46.833	47.169	49.266	50.238	51.547
NAVSTAR GPS-OCS COTS UPGRADE	0.000	13.887	0.081	5.579	0.000	5.579	0.000	0.000	0.000	-
PARCS Block 02	-	0.500	2.949	5.495	0.000	5.495	10.443	9.985	8.962	9.141
Range Communications Facility (RCF)	0.000	8.709	5.978	8.400	0.000	8.400	8.100	0.000	0.000	-
Totals (Total Obligation Authority)										
Total Obligation Authority	0.000	103.616	142.382	185.671	0.000	185.671	178.561	76.963	71.531	71.880

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A&AS	- Advisory & Assistance Services
ABIDES	- Automated Budget Interactive Data Environment System
ACAT	- Acquisition Category
ACTD	- Advanced Concept Technology Demonstration
AGM	- Air-to-Ground Missile
AIM	- Air Intercept Missile
AIS	- Avionics Intermediate Shop
ACMI	- Aircraft Combat Maneuvering Instrumentation
AMRAAM	- Advanced Medium-Range Air-to-Air Missile
APPN	- Appropriation
ATD	- Advanced Technology Development
BA	- Budget Activity
BES	- Budget Estimate Submission
BY	- Budget Year
C3	- Command, Control, and Communication System
CFE	- Contractor Furnished Equipment
CONOPS	- Concept of Operation
CONUS	- Continental United States
CPMS	- Comprehensive Power Management System
CPT	- Cockpit Procedures Trainer
CRA	- Continuing Resolution Authority
CTS	- Countermeasures Test Set
CY	- Current Year
ECCM	- Electronic Counter Counter-Measures
ECM	- Electronic Counter Measures
ECO	- Engineering Change Orders
EOQ	- Economic Order Quantity
ECP	- Engineering Change Proposal
EPA	- Economic Price Adjustment
EW	- Electronic Warfare
EWASIP	- Electronic Warfare Avionics Integration Support Facility
FLIR	- Forward Looking Infra Red

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FOT&E	- Follow-on Test and Evaluation
FOC	- Fully Operational Capability
FLTS	- Flight Line Test Set
FPIF	- Fixed Price Incentive Firm
FPIS	- Fixed Price Incentive Fee, Successive Targets
FY	- Fiscal Year
GANS	- Global Access Navigation & Safety
GATM	- Global Air Traffic Management
GFE	- Government Furnished Equipment
GFP	- Government Furnished Property
GPS	- Global Positioning System
GSE	- Ground Support Equipment
ICS	- Interim Contractor Support
IOC	- Initial Operating Capability
IT	- Information Technology
JUON	- Joint Urgent Operational Need
MAIS	- Major Automated Information System Program
MDAP	- Major Defense Acquisition Program
METS	- Mobile Electronic Test Stations
MYP	- Multiyear Procurement
NAVWAR	- Navigation Warfare
NMC Rate	- Not Mission Capable Rate
OCO	- Overseas Contingency Operations
OT&E	- Operational Test and Evaluation
OWRM	- Other War Reserve Material
PAGEL	- Priced Aerospace Ground Equipment List
PB	- President's Budget
PBR	- Program Budget Review
PMA	- Program Management Administration
PMC	- Procurement Method Code
PNO	- Acquisition Program Number (MDAP Codes)
PR	- Purchase Request
PRCP	- Program Resource Collection Process
PTT	- Part Task Trainer
PY	- Prior Year
R&M	- Reliability and Maintainability

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RAA	- Rapid Acquisition Authority
RDT&E	- Research, Development, Test and Evaluation
RWR	- Radar Warning Receiver
ROM	- Rough Order of Magnitude
SS	- Sole Source
SOF	- Special Operation Force
TAF	- Tactical Air Force
TCAS	- Traffic Collision Alert and Avoidance System
TEWS	- Tactical Electronic Warfare System
TISS	- TEWS Intermediate Support System
TOA	- Total Obligation Authority
WCF	- Working Capital Fund
WRM	- War Reserve Material
WST	- Weapon System Trainer
UAV	- Unmanned Aerial Vehicle
XML	- Extensible Markup Language

BASE / ORGANIZATIONAL ACRONYMS

ACC	- Air Combat Command
AETC	- Air Education & Training Command
AFCAO	- Air Force Computer Acquisition Office
AFCEA	- Air Force Civil Engineering Support Agency
AFCIC	- AF Communications & Information Center
AFCSC	- Air Force Cryptologic Service Center
AFESC	- Air Force Engineering Services Center
AFGWC	- Air Force Global Weather Central
AFIT	- Air Force Institute of Technology
AFLCMC	- Air Force Life Cycle Management Center
AFMC	- Air Force Materiel Command
AFMETCAL	- Air Force Metrology and Calibration Office
AFMLO	- Air Force Medical Logistics Office
AFOSI	- Air Force Office of Special Investigation
AFOTEC	- Air Force Operational Test & Evaluation Center
AFPC	- Air Force Personnel Center
AFPSL	- AF Primary Standards Lab

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AFR	- Air Force Reserve
AFSOC	- AF Special Operations Command
AFSPC	- Air Force Space Command
AIA	- Air Intelligence Agency
ALC	- Air Logistics Center
AMC	- Air Mobility Command
ANG	- Air National Guard
ASC	- Aeronautical Systems Center
AETC	- Air Education Training Command
AU	- Air University
AWS	- Air Weather Service
CIA	- Central Intelligence Agency
DGSC	- Defense General Support Center
DLA	- Defense Logistics Center
DOE	- Department of Energy
DPSC	- Defense Personnel Support Center
DSCC	- Defense Supply Center, Columbus
DTIC	- Defense Technical Information Center
ER	- Eastern Range
ESC	- Electronic Systems Center
FAA	- Federal Aviation Agency
FBI	- Federal Bureau of Investigation
GSA	- General Services Administration
JCS	- Joint Chiefs of Staff
NATO	- North Atlantic Treaty Organization
OSD	- Office of the Secretary of Defense
PACAF	- Pacific Air Forces
USAF	- United States Air Force
USAFA	- United States Air Force Academy
USAFE	- United States Air Force Europe
USCENTCOM	- United States Central Command
USEUCOM	- United States European Command
USMC	- United States Marine Corps
USSTRATCOM	- United States Strategic Command
WP AFB	- Wright-Patterson AFB, OH

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C	- Competitive
BA	- Basic Agreement
BOA	- Basic Ordering Agreement
BPA	- Blanket Purchasing Agreement
CS	- Cost Sharing
IDDQ	- Indefinite Delivery, Definite Quantity
IDIQ	- Indefinite Delivery, Indefinite Quantity
IDRT	- Indefinite Delivery, Requirements
Letter	- Letter
LH	- Labor-hour
MIPR	- Military Interdepartmental Purchase Request
MIPR-C	- Military Interdepartmental Purchase Request - Competitive
MIPR-OPT	- Military Interdepartmental Purchase Request - Option
MIPR-OTH	- Military Interdepartmental Purchase Request - Other
MIPR-SS	- Military Interdepartmental Purchase Request - Sole Source
OPT	- Option
OTH	- Other
PO	- Project Order
REQN	- Requisition
SS	- Sole Source
T&M	- Time and Materials
UCA	- Undefinitized Contract Action
WP	- Work Project

CONTRACTED BY ACRONYMS

11 WING	- 11th Support Wing, Washington, DC
ACC	- Air Combat Command, Langley AFB, VA
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AAC	- Air Armament Center, Eglin AFB, FL
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AETC	- Air Education and Training Command, Randolph AFB, TX
AFCIC	- Air Force Communications and Information Center, Washington, DC
AFCESA	- Air Force Civil Engineering Support Agency, Tyndall AFB, FL
AFFTC	- Air Force Flight Test Center, Edwards AFB, CA

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AFLCMC	- Air Force Life Cycle Management Center, Wright-Patterson AFB, OH
AFMC	- Air Force Materiel Command, Wright-Patterson AFB, OH
AFMETCAL	- Air Force Metrology and Calibration Office, Heath, Ohio
AFMLO	- Air Force Medical Logistics Office, Ft Detrick, MD
AIA	- Air Intelligence Agency, Kelly AFB, TX
AMC	- Air Mobility Command, Scott AFB, IL
ASC	- Aeronautical Systems Center, Wright-Patterson AFB, OH & Eglin AFB, FL
AFWA	- Air Force Weather Agency, Offutt AFB, NE
DGSC	- Defense General Support Center, Richmond, VA
DPSC	- Defense Personnel Support Center, Philadelphia, PA
ER	- Eastern Range, Patrick SFB, FL
ESC	- Electronic Systems Center, Hanscom AFB, MA
HSC	- Human Services Center, Brook AFB, TX
OC-ALC	- Oklahoma City Air Logistics Center, Tinker AFB, OK
OO-ALC	- Ogden Air Logistics Center, Hill AFB, UT
SMC	- Space & Missile Systems Center, Los Angeles AFB, CA
US STRATCOM	- US Strategic Command, Offutt AFB, NE
WACC	- Washington Area Contracting Center, Washington DC
WR	- Western Range, Vandenberg SFB, CA
WR-ALC	- Warner-Robins Air Logistics Center, Robins AFB, GA
AFSPC	- Air Force Space Command, Peterson AFB, CO
HQ ANG	- Headquarters, Air National Guard, Washington, DC
USAFE	- United States Air Force Europe, Ramstein AB, GE
USAFA	- United States Air Force Academy, Colorado Springs, CO

IDENTIFICATION CODES

Code "A"	- Line items of material which have been approved for Air Force service use.
Code "B"	- Line items of material that have not been approved for Service use
OBAN	- Operating Budget Account Number, 2-digit code for unit allocated funds

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force							Date: April 2022				
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs							P-1 Line Item Number / Title: ADV555 / Advanced EHF				

ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
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Line Item MDAP/MAIS Code: 261

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	2.823	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	2.823
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	2.823	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	2.823
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	2.823	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	2.823

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

Description:

The AEHF military satellite communications (MILSATCOM) system provides survivable, anti-jam, worldwide, secure communications for the strategic and tactical warfighter. The system is comprised of 6 satellites, a mission control segment, and cryptography. AEHF satellites augment and replace the legacy Milstar EHF system, providing much higher capacity and data rate increase over the Milstar II capabilities. AEHF is a cooperative program that includes International Partners (Canada, the United Kingdom, and the Kingdom of the Netherlands).

The AEHF procurement program element funds the Command and Control System - Consolidated (CCS-C) mission unique software and databases for AEHF 4-6 satellites. CCS-C provides launch and early orbit support and on-orbit anomaly resolution. Additionally, AEHF procurement program element funds the transfer to CCS-C Assurance and Capability Enhancement (CACE) mission unique software and databases for AEHF 6.

AEHF Space Vehicle-5 (SV-5) and SV-6 were procured under the Department of Defense's Efficient Space Procurement (ESP) approach, which enables stable production and strategic sub-tier management through the block buy of space vehicles employing fixed-price contracting. The AEHF block buy of two satellites enables savings by reducing the effect of obsolescence and production breaks, allowing for economic buying of components, and optimizing production resources. Additionally, ESP enables cost efficiencies with the prime and subcontractor team as well as predictability for the space industrial base. SV-5 launched on 8 Aug 2019 and was transferred to operations February 2020. SV-6 launched on 26 March 2020 and was transferred to operations October 2020.

FY 2021 was the final year of funding for the AEHF program. No additional funds are requested or needed.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2022

Appropriation / Budget Activity / Budget Sub Activity:
 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
 ADV555 / Advanced EHF

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: 261

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	AEHF SV5 SV6		A		- / -	- / 2.823	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / -	- / 2.823	- / 0.000	- / 0.000	- / -	- / 0.000

*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:
 No FY 2023 AEHF funding requested.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force													Date: April 2022					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: ADV555 / Advanced EHF						Item Number / Title [DODIC]: AEHF SV5 SV6						
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total				
Procurement Quantity (<i>Units in Each</i>)				-		-		-		-		-		-				
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-		2.823		-		-		-		-				
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Net Procurement (P-1) (<i>\$ in Millions</i>)				-		2.823		-		-		-		-				
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Total Obligation Authority (<i>\$ in Millions</i>)				-		2.823		-		-		-		-				
<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 Millions</i>)				-		-		-		-		-		-		-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>
Space Vehicle - AEHF SV5 SV6 Cost																		
Recurring Cost																		
Technical Mission Analysis	-	-	-	-	-	0.355	-	-	-	-	-	-	-	-	-	-	-	-
ACF/IC2 Test Asset Support	-	-	-	-	-	0.664	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	1.019	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Space Vehicle - AEHF SV5 SV6 Cost</i>	-	-	-	-	-	1.019	-	-	-	-	-	-	-	-	-	-	-	-
Support - AEHF SV5 SV6 Cost																		
A&AS	-	-	-	-	-	1.804	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - AEHF SV5 SV6 Cost</i>	-	-	-	-	-	1.804	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	2.823	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: AFSCOM / AF Satellite Comm System
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	53.326	39.655	51.414	-	51.414	52.079	52.912	53.957	55.364	-	358.707
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	53.326	39.655	51.414	-	51.414	52.079	52.912	53.957	55.364	-	358.707
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	53.326	39.655	51.414	-	51.414	52.079	52.912	53.957	55.364	-	358.707

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

Description:

The Satellite Control Network (SCN), formerly known as the Air Force Satellite Control Network (AFSCN), is a satellite ground terminal network comprised of two communication nodes (Schriever SFB & Vandenberg SFB) and 15 antenna systems. The antennas are distributed around the globe at seven locations -- Vandenberg Tracking Station (VTS), Diego Garcia Station (DGS), Guam Tracking Station (GTS), Hawaii Tracking Station (HTS), New Hampshire Tracking Station (NHS), Thule Tracking Station (TTS), and Telemetry and Commanding Station (TCS) at RAF Oakingham, England -- to ensure global coverage for over 170 satellites in various orbits operating in a congested and contested environment. The SCN conducts an average of 450+ daily satellite contacts supporting Positioning, Navigation and Timing (PNT), Intelligence, Surveillance and Reconnaissance (ISR), Missile Warning and Missile Defense, Communications, Weather, Launch Vehicle Support, and Research and Development (R&D) satellites for Department of Defense (DoD), Intelligence Community (IC), and National Aeronautics and Space Administration (NASA) operations. While most of the 450+ daily satellite contacts are routine command and control (C2) activities, the SCN is also used during satellite emergencies (e.g. a tumbling satellite) because its high-power antennas are often the only terrestrial assets that can re-establish C2 with a non-responsive satellite. During each Fiscal Year, the SCN typically supports multiple space vehicle emergencies resulting in the preservation of over \$4B+ worth of satellites. In addition to routine and emergency satellite operations C2, the SCN provides support to launch and early orbit operations, ensuring worldwide telemetry during launch vehicle ascent, staging, and orbital insertion, and data transmit and receive for new satellites completing early orbit checkout. During each Fiscal Year, the SCN supports multiple launches delivering an average of \$14B+ worth of satellites to their operational orbits. Finally, the SCN provides Factory Compatibility Testing (FCT) to ensure satellites and launch vehicles can communicate via the SCN before the satellite is launched. SCN funding is used to procure modernized equipment and SE&I support for the SCN to ensure the capability is available to support DoD, Intelligence community, and civil users. Funds will also be used to address Diminishing Manufacturing Sources (DMS) issues, support Enterprise Ground Service (EGS), Commercial Augmentation, and cybersecurity Operations.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

SCN Studies - provides vital analysis through a specified study with a defined deliverable that includes, but is not limited to, facilitating future planning, analyzing architecture alternatives, performing tradeoffs between alternative systems and architectures, and performing cost-benefit analysis.

SCN Knowledge-Based Services - provides Information Assurance (IA) and Test and Evaluation (T&E) expertise to evaluate system functionality and submit packages to Certifying Authorities to obtain Authorizations to Operate (ATO) or Interim Authorizations to Test (IATT); streamlines the validation process and enhances the overall effectiveness of the single Space Force Security Control Assessor (SCA);

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: AFSCOM / AF Satellite Comm System
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>provides Systems Engineering & Integration (SE&I) to integrate new systems and services into SSC programs, gain support for new and on-going efforts in all phases of the acquisition life cycle and standardize systems engineering processes.</p> <p>SCN Services - provides software configuration services for SSC to include updating and maintaining data to support evolving changes to the configuration management and data management practices.</p> <p>SCN Commodity Procurements - the Space Force will use various contract vehicles to address the highest priority concerns/issues. Obsolescence and sustainment "worst actors" are prioritized annually in order of criticality to the mission. The potential for failed satellite contacts drives priority. In each Fiscal Year, funds may be used to address Diminishing Manufacturing Sources (DMS) issues, support Enterprise Ground Service (EGS), Commercial Augmentation, and cybersecurity operations, and are planned to be used for required radome replacements, Defensive Cyber Operations activities and other Cyber security related projects. Other projects include: Boundary Defense, Electronic Schedule Dissemination (ESD) obsolescence, (AF)SCN test bed (ATB) replacements, continued cyber defense work, network automation, and Range/Network/Communication obsolescence replacements. The TCS-B Hybrid procurement will award in FY 2022. This "hybrid" architecture couples the RBC electronics with existing antennas and normalizes electronics across the network. In FY 2023, the design and upgrades from TCS-B will be leveraged to procure the next iteration of RBC for the SCN, referred to as the Modular Transitional Remote tracking station (MTR). This procurement is required to prevent a significant increase to sustainment costs and decrease in operational capability of the already obsolete Automated Remote Tracking Station (ARTS) system and nearing End of Life (EOL) RBC system. Without it, the SCN will experience increased failure rates and lost contacts over time with the potential to impact or lose operational capability of on-orbit payloads that rely on the SCN for command and control. The antiquated SCN system is already operating at the very edge of its capacity supporting over 170 satellites.</p> <p>SCN Replenishment Spares - procures initial spares for developed systems under the sustainment contract, and transitions to government supply to support the maintenance and sustainment of the SCN.</p> <p>Funding for this exhibit contained in PE 1203110SF.</p> <p>These requirements and modifications support performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
AFSCOM / AF Satellite Comm System

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	AF Satellite Comm System		A		- / -	- / 53.326	- / 39.655	- / 51.414	- / -	- / 51.414
P-40	Total Gross/Weapon System Cost				- / -	- / 53.326	- / 39.655	- / 51.414	- / -	- / 51.414

*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:

- 1) SCN Studies (P-5) - FY 2023 funding provides studies that address future planning needs. Studies will also provide critical analysis of architecture alternatives and cyber security requirements.
- 2) SCN Knowledge-Based Services (P-5) - FY 2023 funding provides critical support to the SSC / SCN missions by maintaining the technical baseline, systems engineering, Information Assurance, cybersecurity analysis, expertise and recommendations.
- 3) SCN Services (P-5) - FY 2023 funding provides Configuration and Data Management of the SCN Baselines, Specifications, Drawing, Notice of Revisions, Specification Change Notices, Configuration Control, Configuration Status Accounting, Configuration Audits, and Configuration Identification.
- 4) SCN Commodity Procurement (P-5) - FY 2023 funds are critical to ensuring telemetry, tracking, and commanding are provided for over 170 satellites and that satellite emergencies requiring high-power antennas can be supported. These projects include required radome replacements, Defensive Cyber Operations activities and other cyber security related projects. Other FYDP projects include: Boundary Defense, ESD obsolescence, (AF)SCN test bed (ATB) replacements, continued cyber defense work, network automation, and Range/Network/Communication obsolescence replacements. FY 2023 funding will primarily be used to fund the MTR, which is the next iteration of RBC for the SCN. It consists of an adaptively maintained RBC core that allows a single suite of electronics, critical systems that reduce the logistical footprint. This will address obsolescence issues within the SCN, and move the SCN towards a single technical baseline.
- 5) SCN Replenishment Spares (P-5) - FY 2023 funds the initial sparring for developed systems, ensuring SCN users have the required spares in place to support their systems. These funds are required as the source of supply for any of the new items associated with the weapon system, providing levels for consumable and reparable spares, and ensures the system will have the parts to initiate repair. In addition, funds procure the most urgently needed capital equipment replacements for items that exceed the O&M dollar threshold. This equipment replaces items such as, but not limited to, high power amplifiers, processors, archival event recorders, and Diminishing Manufacturing Sources and Material Shortages (DMSMS), and timing systems, of which these items are at the top of the sustainers "worst actors" list and account for significant maintenance effort, down time, and lost or failed contacts.

The proliferation of new space based capabilities is driving major changes in satellite operations, including: increased satellite ops tempos; launch vehicles capable of putting multiple numbers of satellites into orbit at a time; new mission areas and modified satellite support requirements. Without funding, the SCN will be forced to maintain systems, sub-systems and components beyond EOL, driving an increase in costs to find suitable replacements. Currently, the SCN is operating above recommended utilization rates (currently 60-80%) and denies 4,000 contacts annually. Accordingly, the SCN barely meets a non-wartime readiness posture for current resilient peacetime operations. In under two years, multiple satellite vehicles on the launch manifest will break resilient peacetime operations, placing the SCN in a position where it is incapable to meet a wartime posture. Between now and 2027 satellite numbers using the SCN are expected to more than double. As the USSF strives to add capacity, it is imperative that all legacy SCN antennas are brought up to modern standards to ensure availability, sustainability and cyber resiliency.

Additionally, FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: AFSCOM / AF Satellite Comm System			Item Number / Title [DODIC]: AF Satellite Comm System		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)			-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			-	53.326	39.655	51.414	-	51.414
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	53.326	39.655	51.414	-	51.414
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	53.326	39.655	51.414	-	51.414
<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 Millions)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - AF Satellite Control Network Cost																		
Non Recurring Cost																		
Commodity Procurements	-	-	-	-	-	29.072	-	-	23.518	-	-	32.560	-	-	-	-	-	32.560
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	29.072	-	-	23.518	-	-	32.560	-	-	-	-	-	32.560
<i>Subtotal: Hardware - AF Satellite Control Network Cost</i>	-	-	-	-	-	29.072	-	-	23.518	-	-	32.560	-	-	-	-	-	32.560
Logistics - AF Satellite Comm System Cost																		
Recurring Cost																		
INTERIM SUPPLY SPT - Labor	-	-	-	-	-	0.450	-	-	-	-	-	-	-	-	-	-	-	-
INTERIM SUPPLY SPT - Materiel	-	-	-	-	-	4.478	-	-	-	-	-	-	-	-	-	-	-	-
Technical Mission Analysis	-	-	-	-	-	6.189	-	-	-	-	-	-	-	-	-	-	-	-
Test & Evaluation	-	-	-	-	-	1.583	-	-	-	-	-	-	-	-	-	-	-	-
Enterprise Systems Engineering and Integration (SE&I)	-	-	-	-	-	10.564	-	-	-	-	-	-	-	-	-	-	-	-
Studies	-	-	-	-	-	-	-	-	0.228	-	-	0.000	-	-	-	-	-	0.000
Knowledge-Based Services	-	-	-	-	-	-	-	-	15.807	-	-	16.152	-	-	-	-	-	16.152
Replenishment Spares	-	-	-	-	-	-	-	-	-	-	-	2.600	-	-	-	-	-	2.600

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Exhibit P-5, Cost Analysis: PB 2023 Air Force												Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: AFSCOM / AF Satellite Comm System						Item Number / Title [DODIC]: AF Satellite Comm System					
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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	23.264	-	-	16.035	-	-	18.752	-	-	-	-	-	18.752
<i>Subtotal: Logistics - AF Satellite Comm System Cost</i>	-	-	-	-	-	23.264	-	-	16.035	-	-	18.752	-	-	-	-	-	18.752
Support - AF Satellite Comm System Cost																		
Services	-	-	-	-	-	0.990	-	-	0.102	-	-	0.102	-	-	-	-	-	0.102
<i>Subtotal: Support - AF Satellite Comm System Cost</i>	-	-	-	-	-	0.990	-	-	0.102	-	-	0.102	-	-	-	-	-	0.102
Gross/Weapon System Cost	-	-	-	-	-	53.326	-	-	39.655	-	-	51.414	-	-	-	-	-	51.414

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
CTRSPC / Counterspace Systems

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 1206421F

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	49.155	64.804	62.691	-	62.691	67.320	4.301	2.071	2.125	-	252.467
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	49.155	64.804	62.691	-	62.691	67.320	4.301	2.071	2.125	-	252.467
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	49.155	64.804	62.691	-	62.691	67.320	4.301	2.071	2.125	-	252.467

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

Description:

The Counter Communications System (CCS) Pre-planned Product Improvement (P3I) program provides expeditionary, deployable, reversible offensive space control (OSC) effects applicable across the full spectrum of conflict. It prevents adversary satellite communications (SATCOM) in the Area of Responsibility (AOR) including Command and Control (C2), Early Warning, and Propaganda; and hosts Rapid Reaction Capabilities in response to Urgent Needs. Acquisition Decision Memorandum (24 April 2009) directed all capabilities identified in the October 2006 CCS Block 20, Joint Requirements Oversight Council (JROC) approved Capability Development Document (CDD) shall be accomplished as P3I upgrades to the CCS Block 10.

Funding for this exhibit is in Program Element (PE) 1206421SF, Counterspace Systems. Developmental funding for CCS is in PE 1206421SF, Project 65A001 Counter Satellite Communications System.

Bounty Hunter (BH) is a ground-based, deployable, tactical space Electronic Warfare Support system (ES) that provides SATCOM geolocation and interference detection capabilities that support the Defensive Space Control of US systems in a specific AOR. BH provides the capability to monitor, detect, characterize and geolocate friendly and unfriendly electro-magnetic interference (EMI) across multiple radio frequency bands in support of Command, Control, Communications, Computers, and Intelligence (C4I) systems by US Joint forces. Continuing annual procurement is needed to meet Combatant Command requirements in an ever changing threat environment.

The system was originally a response to Joint Urgent Operational Need. In 2013 AF Requirements Oversight Council directed incorporation of BH capabilities into a Program of Record. In March 2019 Bounty Hunter was designated as a Program of Record and reached Initial Operational Capability in August 2020.

Developmental funding for BH is in PE 1206421SF, Counterspace Systems, Project 65A013 Bounty Hunter.

Space acquisition must respond with speed and agility to emerging adversary threats. The Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force				Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs			P-1 Line Item Number / Title: CTRSPC / Counterspace Systems		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: 1206421F	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	10.3 / Counter Communications System (CCS) Meadowlands Production (Capability Improvement)		A		- / 0.000	- / 44.167	- / 59.793	- / 57.498	- / 0.000	- / 57.498
P-5	Counterspace Systems	P-5a	A		- / -	1 / 4.988	1 / 5.011	1 / 5.193	- / -	1 / 5.193
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 49.155	- / 64.804	- / 62.691	- / -	- / 62.691

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	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	10.3 / Counter Communications System (CCS) Meadowlands Production (Capability Improvement)		A		- / 67.320	- / 4.301	- / 2.071	- / 2.125	- / -	- / 237.275
P-5	Counterspace Systems	P-5a	A		- / -	- / -	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 67.320	- / 4.301	- / 2.071	- / 2.125	- / -	- / 252.467

*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:
 Counter Communications System (CCS): FY 2023 funding is for the production of seven CCS Meadowlands systems (includes signal processing, radio frequency, photonic, and other communications equipment), remote operations suites, mission emulators, training equipment, and associated spares. Begin antenna production for three of the seven Meadowlands systems. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, etc.
 Bounty Hunter (BH): FY 2023 funding procures one additional BH system.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10		P-1 Line Item Number / Title: CTRSPC / Counterspace Systems
		Modification Number / Title: 10.3 / Counter Communications System (CCS) Meadowlands Production

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	44.167	59.793	57.498	0.000	57.498	67.320	4.301	2.071	2.125	-	237.275
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	44.167	59.793	57.498	0.000	57.498	67.320	4.301	2.071	2.125	-	237.275
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	44.167	59.793	57.498	0.000	57.498	67.320	4.301	2.071	2.125	-	237.275
<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 Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Counter Communications System (CCS) Pre-planned Product Improvement (P3I) program provides expeditionary, deployable, reversible offensive space control (OCS) effects applicable across the full spectrum of conflict. It prevents adversary satellite communications (SATCOM) in the Area of Responsibility (AOR) including Command and Control (C2), Early Warning, and Propaganda; and hosts Rapid Reaction Capabilities in response to Urgent Needs. Acquisition Decision Memorandum (24 April 2009) directed all capabilities identified in the October 2006 CCS Block 20, Joint Requirements Oversight Council (JROC) approved Capability Development Document (CDD) shall be accomplished as P3I upgrades to the CCS Block 10.

Funding for this exhibit is in Program Element (PE) 1206421SF, Counterspace Systems. Developmental funding for CCS is in PE 1206421SF, Project 65A001 Counter Satellite Communications System.

Milestone/Development Status

Authority to Proceed - 1QFY22; IBR Phase 2 2QFY22; CLIN 200 Begin - 3QFY22; GFE PICKUP - 4QFY22; Developmental / Operational Test - 4QFY22; Deliveries Begin - 3QFY23

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: CTRSPC / Counterspace Systems	Modification Number / Title: 10.3 / Counter Communications System (CCS) Meadowlands Production

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Models of Systems Affected: 10.3	Modification Type: Capability Improvement	Related RDT&E PEs: 1206421F
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Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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> Hardware End Item												
B Kits												
Recurring												
Hardware End Item:EQUIPMENT Group B (Active)	- / -	5 / 43.400	7 / 58.156	7 / 56.381	- / -	7 / 56.381	7 / 63.981	- / -	- / -	- / -	- / -	26 / 221.918
<i>Subtotal: Recurring</i>	- / -	- / 43.400	- / 58.156	- / 56.381	- / -	- / 56.381	- / 63.981	- / -	- / -	- / -	- / -	- / 221.918
<i>Subtotal: Hardware End Item</i>	- / -	- / 43.400	- / 58.156	- / 56.381	- / -	- / 56.381	- / 63.981	- / -	- / -	- / -	- / -	- / 221.918
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / 43.400	- / 58.156	- / 56.381	- / -	- / 56.381	- / 63.981	- / -	- / -	- / -	- / -	- / 221.918
Support (All Modification Items)												
FFRDC	- / -	- / 0.432	- / 0.474	- / -	- / -	- / -	- / -	- / 2.069	- / 1.071	- / 1.125	- / -	- / 5.171
A&AS	- / -	- / 0.335	- / 0.725	- / -	- / -	- / -	- / -	- / 2.000	- / 1.000	- / 1.000	- / -	- / 5.060
Mod of Spares	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.200	- / -	- / -	- / -	- / -	- / 2.200
<i>Subtotal: Support</i>	- / -	- / 0.767	- / 1.199	- / -	- / -	- / -	- / 2.200	- / 4.069	- / 2.071	- / 2.125	- / -	- / 12.431
Installation												
<i>Modification Item 1 of 1:</i> Hardware End Item	- / -	- / -	4 / 0.438	10 / 1.117	- / -	10 / 1.117	10 / 1.139	2 / 0.232	- / -	- / -	- / -	26 / 2.926
<i>Subtotal: Installation</i>	- / -	- / -	4 / 0.438	10 / 1.117	- / -	10 / 1.117	10 / 1.139	2 / 0.232	- / -	- / -	- / -	26 / 2.926
Total												
Total Cost (Procurement + Support + Installation)	0.000	44.167	59.793	57.498	0.000	57.498	67.320	4.301	2.071	2.125	-	237.275

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: CTRSPC / Counterspace Systems	Modification Number / Title: 10.3 / Counter Communications System (CCS) Meadowlands Production

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

Manufacturer Information

Manufacturer Name: L3Harris	Manufacturer Location: Palm Bay, FL
Administrative Leadtime (in Months): 3	Production Leadtime (in Months): 9

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates	Sep 2021	Jan 2022	Jan 2023	Jan 2024			
Delivery Dates	Jun 2022	Oct 2022	Oct 2023	Oct 2024			

Installation Information

Method of Implementation: Contractor Facility

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	4 / 0.438	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.438
FY 2022	- / -	- / -	- / -	10 / 1.117	- / -	10 / 1.117	- / -	- / -	- / -	- / -	- / -	10 / 1.117
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.139	- / -	- / -	- / -	- / -	10 / 1.139
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.232	- / -	- / -	- / -	2 / 0.232
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	4 / 0.438	10 / 1.117	- / -	10 / 1.117	10 / 1.139	2 / 0.232	- / -	- / -	- / -	26 / 2.926

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	-	4	-	2	2	4	2	2	4	4	-	2	-	-	-	-	-	-	-	-	-	-	-	0	26
Out	0	-	-	-	-	-	-	-	-	-	-	3	3	4	2	1	3	3	3	4	-	-	-	-	-	-	-	-	-	0	26

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: CTRSPC / Counterspace Systems				Item Number / Title [DODIC]: Counterspace Systems	
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:			
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	
Procurement Quantity (<i>Units in Each</i>)			-	1	1	1	-	1	
Gross/Weapon System Cost (<i>\$ in Millions</i>)			-	4.988	5.011	5.193	-	5.193	
Less PY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-	
Net Procurement (P-1) (<i>\$ in Millions</i>)			-	4.988	5.011	5.193	-	5.193	
Plus CY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-	
Total Obligation Authority (<i>\$ in Millions</i>)			-	4.988	5.011	5.193	-	5.193	
<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 Millions</i>)			-	4.988	5.011	5.193	-	5.193	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Counterspace Systems Cost																		
Recurring Cost																		
Procure Bounty Hunter ^(t)	-	-	-	4.988	1	4.988	5.011	1	5.011	5.193	1	5.193	-	-	-	5.193	1	5.193
<i>Subtotal: Recurring Cost</i>	-	-	-	4.988	-	4.988	-	-	5.011	-	-	5.193	-	-	-	-	-	5.193
<i>Subtotal: Hardware - Counterspace Systems Cost</i>	-	-	-	4.988	-	4.988	-	-	5.011	-	-	5.193	-	-	-	-	-	5.193
Gross/Weapon System Cost	-	-	-	4.988	1	4.988	5.011	1	5.011	5.193	1	5.193	-	-	-	5.193	1	5.193

Remarks:

Bounty Hunter (BH) is a ground-based, deployable, tactical space Electronic Warfare Support system (ES) that provides SATCOM geolocation and interference detection capabilities that support the Defensive Space Control of US systems in a specific AOR. BH provides the capability to monitor, detect, characterize and geolocate friendly and unfriendly electro-magnetic interference (EMI) across multiple radio frequency bands in support of Command, Control, Communications, Computers, and Intelligence (C4I) systems by US Joint forces. Continuing annual procurement is needed to meet Combatant Command requirements in an ever changing threat environment.

The system was originally a response to Joint Urgent Operational Need. In 2013 AF Requirements Oversight Council directed incorporation of BH capabilities into a Program of Record. In March 2019 Bounty Hunter was designated as a Program of Record and reached Initial Operational Capability in August 2020. Funds requested in FY 2023 are for Bounty Hunter.

Developmental funding for BH is in PE 1206421SF, Counterspace Systems, Project 65A013 Bounty Hunter.

Bounty Hunter (BH): FY 2023 is for one additional BH system.

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

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Exhibit P-5a, Procurement History and Planning: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: CTRSPC / Counterspace Systems	Item Number / Title [DODIC]: Counterspace 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>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Procure Bounty Hunter		2021	Multiple / Various	PO	CPSG	Nov 2020	Mar 2021	1	4.988	Y		
Procure Bounty Hunter		2022	Multiple / Various	PO	CPSG	Nov 2021	Mar 2022	1	5.011	Y		
Procure Bounty Hunter		2023	Multiple / Various	PO	CPSG	Nov 2022	Mar 2023	1	5.193	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: FBLOST / Family of Beyond Line-of-Sight Terminals
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203001SF	Other Related Program Elements: 0303001F, 0303601F, 1203001F
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	61.190	36.544	26.394	-	26.394	24.893	17.118	15.984	6.750	-	188.873
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	61.190	36.544	26.394	-	26.394	24.893	17.118	15.984	6.750	-	188.873
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	61.190	36.544	26.394	-	26.394	24.893	17.118	15.984	6.750	-	188.873

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

Description:

The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) Command Post Terminals (CPT) program replaces legacy Milstar terminals and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential and National Voice Conferencing (PNVC).

FAB-T CPT will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar and Advanced EHF (AEHF) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar and AEHF satellite constellations. In June 2014, the Department of the Air Force down-selected to Raytheon for production of FAB-T CPT. Production contract options to produce CPT terminals were exercised after a successful Milestone C decision was approved September 1, 2015. In FY 2019, the FAB-T Program Management Office executed the final Low Rate Initial Production (LRIP) procurement to complete the total of 84 LRIP CPTs on contract. CPT has now procured 41 Ground Fixed, 20 Ground Transportable, and 23 Airborne Antennas. In FY 2023, FAB-T CPT will continue to pursue activities that ensure FAB-T CPT terminal interoperability with the full AEHF satellite constellation. Additionally, funding may be used to address Diminishing Manufacturing Sources and Material Shortages associated with production and fielding of the AEHF family of terminals.

The PNVC capability is a critical element of the Nuclear Command, Control, and Communications (NC3) system. PNVC, as the Survivable Emergency Conferencing Network (SECN) replacement capability, provides anti-jam, anti-scintillation, survivable, and endurable voice communications through the AEHF satellite system for national and strategic users. Equipment upgrades required for this system include the development and production of several new components by other organizations, including the Baseband Interface Group (BIG) and Multi-Stream Summing Device (MSD III) for airborne users and the Baseband Kit (BBK) / PNVC Equipment enclosure for mobile users.

The PNVC Integrator is responsible for all program elements and funding, including those related to the Defense Information Systems Agency (DISA) and National Security Agency (NSA) components of the PNVC system, in accordance with the transfer directed in the FY 2018 National Defense Authorization Act, Sec. 1661. PNVC funds were transferred from DISA to the Department of the Air Force (DAF) beginning in FY 2021, and the PNVC Integrator will continue to procure remaining PNVC equipment until all fielding is complete.

FAB-T CPT was reflected in previous Program Exhibits in the Prior Years through FY 2014 - 2020. PNVC was reflected in previous Program Exhibits in the Prior Years through FY 2015 - 2020. Funding for this exhibit is contained in PE 1203001SF.

The FY 2023 funding request was reduced by \$3.5M to account for the availability of prior year execution balances.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs **P-1 Line Item Number / Title:** FBLOST / Family of Beyond Line-of-Sight Terminals

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 1203001SF **Other Related Program Elements:** 0303001F, 0303601F, 1203001F

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	Family of Beyond Line-of-Sight Terminals		B		- / -	- / 61.190	- / 36.544	- / 26.394	- / -	- / 26.394
P-40	Total Gross/Weapon System Cost				- / -	- / 61.190	- / 36.544	- / 26.394	- / -	- / 26.394

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

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

Justification:

In FY 2023, FAB-T CPT will continue to pursue activities that ensure CPT terminal interoperability with the full AEHF satellite constellation, deliver airborne terminals to aircraft depots, provide interim contractor support for the existing fielded terminals, depot activation activities, and operator training. Activities may also include, but are not limited to, program office support, studies, technical analysis, prototyping, training, etc.

In FY 2023, PNVC will continue procuring BBK enclosures for mobile users and any remaining PNVC equipment required for fielding activities, as well as providing support for fielded units.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: FBLOST / Family of Beyond Line-of-Sight Terminals			Item Number / Title [DODIC]: Family of Beyond Line-of-Sight Terminals		
ID Code (A=Service Ready, B=Not Service Ready) : B				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)			-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			-	61.190	36.544	26.394	-	26.394
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	61.190	36.544	26.394	-	26.394
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	61.190	36.544	26.394	-	26.394
<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 Millions)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Presidential and National Voice Conferencing (PNVC) Cost																		
Recurring Cost																		
BBKs / PNVC Equipment	-	-	-	-	-	5.240	-	-	5.799	-	-	7.316	-	-	-	-	-	7.316
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	5.240	-	-	5.799	-	-	7.316	-	-	-	-	-	7.316
<i>Subtotal: Hardware - Presidential and National Voice Conferencing (PNVC) Cost</i>	-	-	-	-	-	5.240	-	-	5.799	-	-	7.316	-	-	-	-	-	7.316
Hardware - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost																		
Recurring Cost																		
FAB-T Terminals (PE 33601F/33001F)	-	-	-	-	-	23.324	-	-	3.118	-	-	0.940	-	-	-	-	-	0.940
Technical Mission Analysis	-	-	-	-	-	0.850	-	-	0.989	-	-	0.942	-	-	-	-	-	0.942
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	24.174	-	-	4.107	-	-	1.882	-	-	-	-	-	1.882
<i>Subtotal: Hardware - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost</i>	-	-	-	-	-	24.174	-	-	4.107	-	-	1.882	-	-	-	-	-	1.882
Logistics - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost																		
Recurring Cost																		
Interim Contractor Support	-	-	-	-	-	29.468	-	-	14.234	-	-	4.649	-	-	-	-	-	4.649
Depot Activation	-	-	-	-	-	0.815	-	-	8.243	-	-	9.568	-	-	-	-	-	9.568
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	30.283	-	-	22.477	-	-	14.217	-	-	-	-	-	14.217

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Exhibit P-5, Cost Analysis: PB 2023 Air Force												Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: FBLOST / Family of Beyond Line-of-Sight Terminals						Item Number / Title [DODIC]: Family of Beyond Line-of-Sight Terminals					
ID Code (A=Service Ready, B=Not Service Ready) : B												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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Logistics - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost</i>	-	-	-	-	-	30.283	-	-	22.477	-	-	14.217	-	-	-	-	-	14.217
Support - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost																		
FAB-T A&AS	-	-	-	-	-	0.560	-	-	3.494	-	-	2.035	-	-	-	-	-	2.035
Other Support	-	-	-	-	-	0.933	-	-	0.667	-	-	0.944	-	-	-	-	-	0.944
<i>Subtotal: Support - Family of Beyond Line-of-Sight Terminals (FAB-T) Cost</i>	-	-	-	-	-	1.493	-	-	4.161	-	-	2.979	-	-	-	-	-	2.979
Gross/Weapon System Cost	-	-	-	-	-	61.190	-	-	36.544	-	-	26.394	-	-	-	-	-	26.394

Remarks:

This P-Doc incorporates PE 1203001SF for FAB-T / PNVC.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GAP000 / Wideband Gapfiller Satellites (Space)

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	5.000	0.000	21.982	-	21.982	0.000	0.000	0.000	0.000	-	26.982
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	5.000	0.000	21.982	-	21.982	0.000	0.000	0.000	0.000	-	26.982
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	5.000	0.000	21.982	-	21.982	0.000	0.000	0.000	0.000	-	26.982

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

Description:

Upon approval of the FY21 Omnibus Appropriation 3022 new start requirement for Wideband Gapfiller Satellites, P-1 Line Item GAP000/Wideband Gapfiller Satellites efforts were transferred to Appropriation 3022, Procurement, Space Force from Appropriation 3021, as these efforts were not administratively transferred in the FY 2021 President's Budget Request following the creation of a new Appropriation for Space Force.

FY 2021 funds of 5.000M reflect Above Threshold Reprogramming transfer to provide critical Federally Funded Research and Development Center and Systems Engineering and Integration (FFRDC & SE&I) personnel required to execute programmatic support for the Wideband Gapfiller Satellites (WGS 11+) program to maintain a FY 2024 launch.

The Wideband Global SATCOM (WGS) System provides the DoD with high data rate Military Satellite Communication (MILSATCOM) services in accordance with the Joint Space Management Board-approved MILSATCOM architecture (August 1996), the Joint Requirements Oversight Council (JROC)-approved MILSATCOM Capstone Requirements Document (October 1997), and JROC-approved WGS Operational Requirements Document (May 2000). This program was originally conceived to augment the near-term "bandwidth gap" in warfighter communications needs. Dual-frequency WGS satellites augment, then replace the DoD's Defense Satellite Communications System X-band service and augment one-way Global Broadcast Service Ka-band capabilities. In addition, WGS provides a high capacity two-way Ka-band service.

WGS Block I consists of satellites 1-3, Block II consists of satellites 4-6 and Block II Follow-on (B2FO) includes satellites 7-10 and WGS 11+. WGS satellites 1-10 have been funded, procured and launched in previous budget cycles.

In the Consolidated Appropriations Act, FY 2018, Congress added 600.0M Space Procurement Air Force (SPAF) in FY 2018 for "full funding for WGS 11 and 12." A sole source Request for Proposal was released to Boeing in June 2018. A final decision was made to procure a single satellite (WGS 11+) with twice the operational capacity of WGS 10 as the best approach to delivering the directed additional WGS capacity in a cost effective manner. Total WGS 11+ 3021/3022 funds are 670.859M.

International Partners (IPs) receive constellation-wide WGS resources commensurate with their financial contributions to the WGS system. Investment from IPs to cooperatively enhance the system started in November 2007 through a bilateral Memorandum of Understanding (MOU) with Australia to fund WGS space vehicle (SV)-6, launch and launch services. Five countries signed a new multilateral WGS MOU in 2012 and funded the procurement of WGS SV-9. In 2017, Amendment One to the WGS MOU leveraged additional funding for resiliency enhancements from two new IPs.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: GAP000 / Wideband Gapfiller Satellites (Space)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>There is an International Agreement via the State Department regarding IP collaboration with WGS 11+. In Amendment Two to the multilateral MOU, IPs agree to cover necessary ground upgrades and launch costs for WGS 11+ not included in the 2018 Congressional add, with Space Systems Command (SSC) providing program management, integration, and engineering expertise through FY 2026. Nine IPs are expected to sign the updated WGS MOU by 3QFY2022 including Belgium, Canada, the Czech Republic, Denmark, Luxembourg, the Netherlands, New Zealand, Norway and the United Kingdom. Discussions for potential future partnerships regarding the WGS program continue in support of National Space Policy and improved operational efficiency.</p> <p>Space acquisition must respond with speed and agility to emerging adversary threats. SSC has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.</p> <p>Funding for this exhibit is contained in PE 1203600SF.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GAP000 / Wideband Gapfiller Satellites (Space)

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	Wideband Gapfiller Satellites (Space)		A		- / -	- / 5.000	- / 0.000	- / 21.982	- / -	- / 21.982
P-40	Total Gross/Weapon System Cost				- / -	- / 5.000	- / 0.000	- / 21.982	- / -	- / 21.982

*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 2023 funds are required to provide WGS 11+ integration and program/product support critical to managing production milestones and mission assurance activities, including production, assembly, test, launch in FY 2024 and operational checkout. The International Agreement with IPs via the State Department requires WGS to provide program management and Systems Engineering & Integration (SE&I) expertise in the building and launching of WGS 11+ to ensure successful integration into the WGS constellation. The FY 2023 funds are required to provide that expertise and avoid violation of the State Department agreement.

FY23 funds are required to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: GAP000 / Wideband Gapfiller Satellites (Space)			Item Number / Title [DODIC]: Wideband Gapfiller Satellites (Space)		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)			-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			-	5.000	0.000	21.982	-	21.982
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	5.000	0.000	21.982	-	21.982
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	5.000	0.000	21.982	-	21.982
<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 Millions)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Space Vehicle - Wideband Gapfiller Satellites Cost																		
Recurring Cost																		
WGS 11	-	-	-	-	-	0.041	-	-	0.000	-	-	16.635	-	-	-	-	-	16.635
Technical Mission Analysis	-	-	-	-	-	4.318	-	-	-	-	-	3.269	-	-	-	-	-	3.269
SE&I	-	-	-	-	-	0.511	-	-	-	-	-	0.358	-	-	-	-	-	0.358
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	4.870	-	-	0.000	-	-	20.262	-	-	-	-	-	20.262
<i>Subtotal: Space Vehicle - Wideband Gapfiller Satellites Cost</i>	-	-	-	-	-	4.870	-	-	0.000	-	-	20.262	-	-	-	-	-	20.262
Support - Wideband Gapfiller Satellites Cost																		
A&AS	-	-	-	-	-	0.118	-	-	-	-	-	1.230	-	-	-	-	-	1.230
Other Support	-	-	-	-	-	0.012	-	-	-	-	-	0.490	-	-	-	-	-	0.490
<i>Subtotal: Support - Wideband Gapfiller Satellites Cost</i>	-	-	-	-	-	0.130	-	-	-	-	-	1.720	-	-	-	-	-	1.720
Gross/Weapon System Cost	-	-	-	-	-	5.000	-	-	0.000	-	-	21.982	-	-	-	-	-	21.982

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: GNRLIT / General Information Tech - Space
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	3.299	3.316	5.424	-	5.424	5.500	4.673	3.968	4.072	-	30.252
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	3.299	3.316	5.424	-	5.424	5.500	4.673	3.968	4.072	-	30.252
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	3.299	3.316	5.424	-	5.424	5.500	4.673	3.968	4.072	-	30.252

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

Description:

Funding for this exhibit is contained in PE 1203173SF, PE 1203174SF, PE 1208736SF, and PE 1208739SF.

PE 1203173SF Research & Development (R&D) Space and Missile Operations

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Innovation and Prototyping Directorate at Kirtland AFB (KAFB), NM, conducts space and missile Prototype Space Vehicle (SV) Ground Test and Evaluation (T&E) and Initial Operational Test and Evaluation (IOT&E) to support prototype, experimental, demonstration, and operational satellites within the RDT&E Support Complex (RSC) and Mobile Range Facility (MRF) at KAFB and at Schriever Space Force Base (SSFB), CO. The RDSMO program portfolio develops, acquires, integrates, delivers, tests, operates, and sustains all Multi- Mission Satellite Operations Center (MMSOC) satellite command and control (C2) Ground System Enterprises (GSE) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of USSF and DoD missions and transitions designated satellite missions to the operational command upon user needs. Funds in the General Information Technology (Space) line procure Information Technology products to support RDSMO, which operates one-of-kind R&D and prototype satellites, transitioning those with military utility directly into warfighter operations.

PE 1203174SF Space Innovation, Integration and Rapid Technology Development

Located at Peterson Space Force Base, Colorado, the Space Innovation, Integration and Rapid Technology Development (SIIRTD) program supports the U.S. Space Force Analysis Center Advanced Virtual Analysis Capability (AVAC) system, a stand-alone system that provides a crosscutting capability to conduct, support, and report analysis on a myriad of tools, data, models and simulations. AVAC allows leadership to make decisions based on quantifiable operational impacts using various vignettes and studies applied to space and cyber assets. Funding buys system-specific hardware, software, routers, licenses, etc., to maintain the efficiency and compatibility with all current models.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC), which oversees the RDSMO and SIIRTD efforts, has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

PE 1208736SF Range and Adversary

This effort is executed by the Space Training and Readiness Command (STARCOM) located at Peterson Space Force Base in Colorado Springs and is a new start in FY23. The Program Element enables the Department of Defense's only Space Test and Training Range, providing joint, service, and coalition customers with a safe and secure environment to support space control technique development and space

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: GNRLIT / General Information Tech - Space
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>test, training, and exercise activities. Also enables space aggressor capability which provides the United States Space Force's (USSF) professional adversary force, integrating across domains to ensure allied victory. Aggressors replicate the threat through expertise in multi-domain adversary operations and tactics, education of USSF, United States Air Force, Joint, and Coalition communities on multi-domain threats, as well as execution of integrated, advanced, and credible multi-domain threat replication operations in exercise and test environments. Provides threat replication across the full spectrum of space and counter space threats, to include Global Positioning System Electronic Attack, Satellite Communication EA, Orbital Warfare, and Adversary SATCOM Network.</p> <p>PE 1208739SF Training and Readiness This effort is executed by the Space Training and Readiness Command (STARCOM) located at Peterson Space Force Base in Colorado Springs. As directed by the AF Operational Training Infrastructure 2035 Flight Plan, space training holds a high priority for training capabilities that include a holistic and integrated approach, and achieves full-spectrum readiness for space forces. The Distributed Communications Architecture (DCA) within the Distributed Mission Operations provides this technology and allows the USSF to evolve toward more space trainers and simulators that are network capable and able to interact in a synthetic environment with other weapon system trainers and a multi-domain command and control entity, pulling in data from a resilient enterprise ground architecture. The technology within the DCA allows for a distributed combat training environment for warfighters around the globe, remotely, without the need to travel to a dedicated training/exercise site.</p>		
<p>Justification: PE 1203173SF RDSMO</p> <p>FY 2023 \$2.046M funds will be used to purchase additional Uninterruptible Power Supply (UPS) to support the Multi-Mission Satellite Operations Center (MMSOC), thereby reducing the risk of mission failure due to power outages if RDSMO operators are unable to command and control satellites critical to informing future space architectures. Additionally, it is necessary for RDSMO to purchase a replacement GPS Timing System. Precision timing is required to support communication relays on multiple high-priority R&D satellite missions. The current GPS receivers must be replaced, as the manufacturer can no longer support the existing units and the current units lack security encryption, are not M[1]code (current DoD standard) capable, and do not meet cybersecurity standards.</p> <p>FY 2023 funds will also be used to recapitalize end-of-life hardware and network components which currently exist on the unclassified interfaces to the MMSOC XPro KAFB systems. This unclassified equipment is crucial to match the reliability and performance of classified systems while also improving cyber-security.</p> <p>Additionally, FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>PE 1203174SF SIIRTD FY 2023 funding (\$0.427M) modifies modeling and simulation tools that U.S. Space Force's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. This effort will incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current. Its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Space Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.</p> <p>PE 1208736SF Range and Adversary FY23 funding (\$1.921M) in this program provides realistic and relevant threat replication, through Commercial off-the-shelf (COTS) GPS and SATCOM equipment. Current equipment is over 10 years old, failing, antiquated and therefore does not accurately replicate existing adversary threats due to system limitations. Procurement funding will provide a 166% increase SATCOM availability and 120% increase in GPC electronic attack assets used to replicate adversary counter-space operations in support of Joint training audiences. Funds provide recapitalization of five SATCOM equipment assets and eight GPS assets within FY23-25; FY26 and beyond provides a steady-state sustainment and replacement cycle for both SATCOM and GPS assets. Without funding, the space aggressors are at risk of significant degradation in their threat replication capabilities. Aging equipment will prevent the space aggressors from providing a realistic threat environment and degrade our ability to train joint and coalition partners in a contested, degraded, operationally-limited space environment.</p> <p>PE 1208739SF Training and Readiness FY23 funding (\$1.030M) procures information technology hardware & software infrastructure for the Distributed Communications Architecture (DCA) for the Distributed Mission Operations (DMO) for Space. This system provides a network-based communications capability enabling dispersed space personnel to participate in space exercises, like Space Flag, wargames and</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: GNRLIT / General Information Tech - Space
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>advanced space training events. DMO provides a high-fidelity theater synthetic battlespace and world-class exercise control to support joint distributed warfighter training, testing and experimentation across the operational and tactical levels of war. It can also support limited command and control capabilities for space operations.</p> <p>NOTE: -\$0.933M, SpOC funding moved from the SIIRTD line of effort with the stand-up of STARCOM, to SSC so they could execute the Training and Readiness effort on behalf of the Distributed Mission Operations Center - Space.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GPS03C / GPSIII Follow On

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 1203269SF **Other Related Program Elements:** 1203269F

Line Item MDAP/MAIS Code: 590

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	2	3	2	-	2	2	2	2	2	4	19
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	597.796	852.918	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	7,019.197
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	597.796	852.918	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	7,019.197
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	597.796	852.918	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	7,019.197

(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 Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	298.898	284.306	328.781	-	328.781	332.075	341.721	356.979	374.477	525.105	369.431

Description:

The Global Positioning System (GPS) is a space-based navigation system that fills validated Joint Service requirements for worldwide, accurate, common grid three dimensional positioning/navigation for military aircraft, ships, and ground personnel. The consistent accuracy, unaffected by location or weather and available in real time, significantly improves effectiveness of reconnaissance, weapons delivery, mine countermeasures and rapid deployment for all services. GPS must comply with Title 10 United States Code (USC) Sec. 2281, which requires that the Secretary of Defense ensures the continued sustainment and operation of GPS for military and civilian purposes, and 51 USC Sec. 50112, which requires that GPS complies with certain standards and facilitates international cooperation.

The system is composed of three segments: User Equipment (funded under Program Element (PE) 1203164F, 1203164SF), Space (funded under PE 1203165F, 1203265F, 1203265SF, 1203269F, and 1203269SF), and a Control Network (funded under PE 1206423F, 1206423SF and 1203165F). The satellites broadcast high accuracy data using precisely synchronized signals that are received and processed by user equipment installed in military platforms. The user equipment computes the platform position and velocity and provides steering vectors to target locations or navigation waypoints. The control segment provides daily updates to the navigation messages broadcast from the satellites to maintain system precision in three dimensions to 16 meters (spherical error probable) worldwide. Additionally, GPS supports the United States Nuclear Detonation (NUDET) Detection System (USNDS) mission and provides strategic and tactical support to the following Department of Defense missions: Joint Operations by providing capabilities for Positioning, Navigation, and Timing (PNT); Command, Control, Communications, and Intelligence; Special Operations; Military Operations in Urban Terrain; Defense-Wide Mission Support; Air Mobility; and Space Launch Orbital Support.

GPS III Follow On (GPS IIIF) delivers improved satellites beyond the first ten SVs being delivered by the GPS III program (funded in PE 1203265SF GPS III Space Segment). The GPS IIIF satellites maintain the same capabilities as the GPS III satellites, and also deliver significant enhancements to include: backward compatibility, Unified S-Band interface compliance, integration of hosted payloads including a redesigned USNDS payload, Laser Retro-reflector Arrays (LRAs), Search and Rescue/GPS (SAR/GPS), and Regional Military Protection (RMP) capabilities that provide the ability to deliver high-power regional Military Code signals in specific areas of intended effect. Implementation of RMP into the GPS Enterprise requires integration with the ground and user segments, executed by the GPS Next Generation Operational Control System and Military GPS User Equipment programs, respectively. The SAR/GPS payload provided by Canada fills a validated National Search and Rescue Committee requirement to provide an enduring, space-based distress alerting capability to detect, locate, and relay distress alerts to fulfill its responsibilities under international agreements for Search and Rescue. The LRA, built by the Naval Research Lab, is a passive reflector that improves accuracy and provides better ephemeris data. National Geospatial-Intelligence Agency funds the integration costs of the LRA.

In December 2017, The Principal Deputy Assistant Secretary of the Air Force (Acquisition & Logistics) declared the GPS IIIF program a new start beginning in Fiscal Year (FY) 2019 and consistent with the FY 2016 National Defense Authorization Act, the program was categorized as an Acquisition Category 1B Major Defense Acquisition Program (MDAP) with the Service Acquisition Executive as the Milestone Decision Authority (MDA). During this time, the MDA approved the second phase of the two-phased GPS IIIF acquisition strategy. Executed using funds in PE 1203265F, GPS III Space Segment, the Phase 1

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: GPS03C / GPSIII Follow On
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203269SF	Other Related Program Elements: 1203269F
Line Item MDAP/MAIS Code: 590		
<p>Production Readiness Feasibility Assessments conducted during FY 2016 - FY 2017 provided data and insight into contractors' GPS satellite production designs with emphasis on a mature navigation payload and production-ready designs. Phase 1 results affirmed the viability of a competitive approach for Phase 2. The Phase 2 strategy directed the Air Force to conduct a full-and-open competition for GPS III F SVs and specified the use of RDT&E funds to deliver SVs 11-12 and conduct associated Non-Recurring Engineering. Milestone C Certification was achieved in July 2020 and procurement of SV 13+ occurred via annual contract options exercised using Procurement, Space Force funds consistent with full-funding policy under an annual-buy approach.</p> <p>Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.</p> <p>GPS III F SVs 11 - 12 are in development and proceeding as planned. Both SVs have expected Available for Launch dates in FY 2026. Procurement of SVs 13 and 14 was awarded on October 7, 2020. Additionally, the GPS III F program office capitalized on a one-time only opportunity for economy of scale acquisition, via an Alternate Buy Strategy, that reduced total production costs with no expected impact to Acquisition Program Baseline milestones or planned on-orbit delivery of the SVs. SVs 15, 16, and 17 was awarded on October 22, 2021.</p> <p>For FY 2022, there is a increase in funding and quantity. A Congressional add of \$260M was received for FY 2022 for the purchase of one additional satellite. Funding for this exhibit is contained in PE 1203269SF.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GPS03C / GPSIII Follow On

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 1203269SF **Other Related Program Elements:** 1203269F

Line Item MDAP/MAIS Code: 590

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	GPSIII Follow On	P-5a, P-21	B		- / -	2 / 597.796	3 / 852.918	2 / 657.562	- / -	2 / 657.562
P-40	Total Gross/Weapon System Cost				- / -	2 / 597.796	3 / 852.918	2 / 657.562	- / -	2 / 657.562

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

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

Justification:
FY 2023 funding procures two GPS IIIF production satellites (SVs 19-20) in addition to any recurring, SV-specific support equipment and tooling. FY 2023 funding also procures independent technical, systems engineering, and integration support critical to managing production milestones, mission assurance activities, and technology refreshes. Funding implements rapid system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: GPS03C / GPSIII Follow On	Item Number / Title [DODIC]: GPSIII Follow On

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)	-	2	3	2	-	2
Gross/Weapon System Cost (\$ in Millions)	-	597.796	852.918	657.562	-	657.562
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	597.796	852.918	657.562	-	657.562
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	597.796	852.918	657.562	-	657.562

(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 Millions)	-	298.898	284.306	328.781	-	328.781

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Space Vehicle - GPSIII Follow On Cost																		
Recurring Cost																		
GPS III ^(t)	-	-	-	277.083	2	554.166	262.781	3	788.343	300.257	2	600.514	-	-	-	300.257	2	600.514
GPS III Enterprise SE&I	-	-	-	-	-	0.000	-	-	15.745	-	-	15.374	-	-	-	-	-	15.374
GPS III Technical Mission Analysis	-	-	-	-	-	3.435	-	-	10.042	-	-	5.074	-	-	-	-	-	5.074
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	557.601	-	-	814.130	-	-	620.962	-	-	-	-	-	620.962
<i>Subtotal: Space Vehicle - GPSIII Follow On Cost</i>	-	-	-	-	-	557.601	-	-	814.130	-	-	620.962	-	-	-	-	-	620.962
Support - GPSIII Follow On Cost																		
GPS III FFRDC	-	-	-	-	-	10.956	-	-	8.504	-	-	5.623	-	-	-	-	-	5.623
GPS III A&AS	-	-	-	-	-	29.239	-	-	30.034	-	-	30.727	-	-	-	-	-	30.727
GPS III Other Support	-	-	-	-	-	0.000	-	-	0.250	-	-	0.250	-	-	-	-	-	0.250
<i>Subtotal: Support - GPSIII Follow On Cost</i>	-	-	-	-	-	40.195	-	-	38.788	-	-	36.600	-	-	-	-	-	36.600
Gross/Weapon System Cost	-	-	-	298.898	2	597.796	284.306	3	852.918	328.781	2	657.562	-	-	-	328.781	2	657.562

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

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Exhibit P-5a, Procurement History and Planning: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: GPS03C / GPSIII Follow On	Item Number / Title [DODIC]: GPSIII Follow On
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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>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
GPS III ^(†)		2021	Lockheed Martin / Littleton, CO	C / FPIF	SSC, LA AFB, CA	Oct 2020	Apr 2027	2	277.083	N	Sep 2020	
GPS III ^(†)		2022	Lockheed Martin / Littleton, CO	C / FPIF	SSC, LA AFB, CA	Oct 2021	Feb 2028	3	262.781	N	Sep 2021	
GPS III ^(†)		2023	Lockheed Martin / Littleton, CO	C / FPIF	SSC, LA AFB, CA	Oct 2022	Feb 2029	2	300.257	N	Sep 2021	

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: GPS03C / GPSIII Follow On Item Number / Title [DODIC]: GPSIII Follow On

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021														Fiscal Year 2022														BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021														Calendar Year 2022														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
GPS III F																																			
	1	2021	AF	2	0	2	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2						
	1	2022	AF	3	0	3														A	-	-	-	-	-	-	-	-	3						
	1	2023	AF	2	0	2																							2						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: GPS03C / GPSIII Follow On Item Number / Title [DODIC]: GPSIII Follow On

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2023														Fiscal Year 2024														BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023														Calendar Year 2024														
							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					
GPS III F																																			
	1	2021	AF	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2						
	1	2022	AF	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3						
	1	2023	AF	2	0	2	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2							
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: GPS03C / GPSIII Follow On Item Number / Title [DODIC]: GPSIII Follow On

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2025														Fiscal Year 2026														B A L A N C E
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 4	BAL D U E A S O F 1 O C T	Calendar Year 2025														Calendar Year 2026														
							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					
GPS IIIF																																			
1		2021	AF	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2					
1		2022	AF	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3					
1		2023	AF	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: GPS03C / GPSIII Follow On Item Number / Title [DODIC]: GPSIII Follow On

Table with columns for Cost Elements, Fiscal Year 2027, Fiscal Year 2028, and BALANCE. Includes rows for GPS III F and monthly data for 2021, 2022, and 2023.

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Exhibit P-21, Production Schedule: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: GPS03C / GPSIII Follow On Item Number / Title [DODIC]: GPSIII Follow On

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2029														Fiscal Year 2030														BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2028	BAL DUE AS OF 1 OCT	Calendar Year 2029														Calendar Year 2030														
							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					
GPS III F																																			
	1	2021	AF		2	2	0																							0					
	1	2022	AF		3	2	1		1																					0					
	1	2023	AF		2	0	2	-	-	-	-	1	-	-	-	1														0					
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: GPS03C / GPSIII Follow On	Item Number / Title [DODIC]: GPSIII Follow On
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2023	1-8-5 For 2023	MAX For 2023	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed Martin - Littleton, CO			4	0	1	76	77	0	0	0	0

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

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

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: GPSIII / GPS III Space Segment
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203265SF	Other Related Program Elements: 1203265F
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Line Item MDAP/MAIS Code: 590

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	20.122	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	459.978
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	20.122	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	459.978
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	20.122	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	459.978

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

Description:

The Global Positioning System (GPS) is a space-based navigation system that fills validated Joint Service requirements for worldwide, accurate, common grid three dimensional positioning/navigation for military aircraft, ships, and ground personnel. The consistent accuracy, unaffected by location or weather and available in real time, significantly improves effectiveness of reconnaissance, weapons delivery, mine countermeasures and rapid deployment for all services. GPS must comply with Title 10 United States Code (USC) Sec. 2281, which requires that the Secretary of Defense ensures the continued sustainment and operation of GPS for military and civilian purposes, and 51 USC Sec. 50112, which requires that GPS complies with certain standards and facilitates international cooperation.

The system is composed of three programs: User Equipment (funded under Program Element (PE) 1203164F, 1203164SF), Space (funded under PE 1203165F, 1203265F, 1203265SF, 1203269F, and 1203269SF), and a Control Network (funded under PE 1206423F, 1206423SF and 1203165F). The satellites broadcast high accuracy data using precisely synchronized signals that are received and processed by user equipment installed in military platforms. The user equipment computes the platform position and velocity and provides steering vectors to target locations or navigation waypoints. The control segment provides daily updates to the navigation messages broadcast from the satellites to maintain system precision in three dimensions to 16 meters (spherical error probable) worldwide. Additionally, GPS supports the United States Nuclear Detonation Detection System mission and provides strategic and tactical support to the following Department of Defense missions: Joint Operations by providing capabilities for Positioning, Navigation, and Timing (PNT); Command, Control, Communications, and Intelligence; Special Operations; Military Operations in Urban Terrain; Defense-Wide Mission Support; Air Mobility; and Space Launch Orbital Support.

GPS III is the next generation of Space Vehicles (SV) supporting the GPS constellation. GPS III SVs delivers significant enhancements, including a new international civil (L1C) Galileo-compatible signal, and enhanced anti-jam power. GPS III SVs 06-10 are in the Production and Deployment Phase.

The Air Force GPS directorate received USD(AT&L) approval to purchase GPS III SVs 09-10 at the December 2014 Defense Acquisition Board in order to sustain the constellation while competitive options were pursued. The GPS III SVs 09-10 purchases are on the current Lockheed Martin contract as technical equivalents of SVs 01-08. SV 09 is funded with FY 2014 Missile Procurement, Air Force (MPAF) advance procurement and FY 2015 MPAF regular procurement. SV 10 is funded with FY 2015 MPAF advance procurement, and FY 2016 Space Procurement, AF regular procurement.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: GPSIII / GPS III Space Segment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203265SF	Other Related Program Elements: 1203265F
Line Item MDAP/MAIS Code: 590		

SV 01 and SV 02 were successfully launched in December 2018 and August 2019, respectively. SV 03 was successfully launched in June 2020 and operationally accepted in July 2020. SV 04 was successfully launched in November 2020 and operationally accepted in December 2020. SV 05 was successfully launched and operationally accepted in June 2021. SV 06 achieved Available for Launch (AFL) in April 2021 and has a projected Initial Launch Capability (ILC) of January 2023. SV 07 achieved AFL in May 2021 and has a projected ILC in FY 2024. SV 08 achieved AFL in June 2021 and has a projected ILC in FY 2025. SV 09 has a projected AFL of October 2022 and SV 10 has a projected AFL of February 2023.

FY 2023 funding increases from FY 2022 due to funding needs for SVs 03-10 on-orbit activities and milestone award payments, SVs 06-10 launch readiness, and SV 09-10 production. Funding supports a SV 06 current launch projection in January 2023 and a SV 07 projected launch in FY 2024.

Funding for this exhibit is contained in PE 1203265SF.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GPSIII / GPS III Space Segment

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 1203265SF **Other Related Program Elements:** 1203265F

Line Item MDAP/MAIS Code: 590

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	GPS III Space Segment		B		- / -	- / 20.122	- / 84.452	- / 103.340	- / -	- / 103.340
P-40	Total Gross/Weapon System Cost				- / -	- / 20.122	- / 84.452	- / 103.340	- / -	- / 103.340

*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 2023 funding will procure independent technical and integration support critical to managing SVs 09-10 production milestones, SVs 05-06 on-orbit milestones, SVs 07-10 storage, mission readiness testing, mission assurance activities, and launch preparation events. Also funds SV 05 final on-orbit incentive fees and supports SV 06 and SV 07 planned ILCs in FY 2023 and FY 2024, respectively. SVs 08-10 have planned ILCs in FY 2025 and FY 2026.

FY 2021 funds include \$4.024M Below Threshold Reprogramming transfer to provide funding support for storage, launch operations, and production costs for SV 06-10.

Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: GPSIII / GPS III Space Segment			Item Number / Title [DODIC]: GPS III Space Segment		
ID Code (A=Service Ready, B=Not Service Ready) : B				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)			-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			-	20.122	84.452	103.340	-	103.340
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	20.122	84.452	103.340	-	103.340
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	20.122	84.452	103.340	-	103.340
<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 Millions)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Space Vehicle - GPS III Space Segment Cost																		
Recurring Cost																		
GPS III SV03-10	-	-	-	-	-	2.650	-	-	21.571	-	-	3.670	-	-	-	-	-	3.670
GPS III SV03-10 Enterprise SE&I	-	-	-	-	-	0.000	-	-	3.284	-	-	3.348	-	-	-	-	-	3.348
GPS III SV03-10 Technical Mission Analysis	-	-	-	-	-	3.283	-	-	4.943	-	-	3.320	-	-	-	-	-	3.320
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	5.933	-	-	29.798	-	-	10.338	-	-	-	-	-	10.338
<i>Subtotal: Space Vehicle - GPS III Space Segment Cost</i>	-	-	-	-	-	5.933	-	-	29.798	-	-	10.338	-	-	-	-	-	10.338
Checkout and Launch - GPS III Space Segment Cost																		
GPS III SV03-10 Launch Services	-	-	-	-	-	0.130	-	-	18.025	-	-	79.118	-	-	-	-	-	79.118
GPS III SV03-10 On-Orbit/Mission Success Incentive	-	-	-	-	-	6.786	-	-	8.769	-	-	2.821	-	-	-	-	-	2.821
GPS III SV03-10 Storage and MRT	-	-	-	-	-	0.300	-	-	15.677	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Checkout and Launch - GPS III Space Segment Cost</i>	-	-	-	-	-	7.216	-	-	42.471	-	-	81.939	-	-	-	-	-	81.939
Support - GPS III Space Segment Cost																		
GPS III SV 03-10 FFRDC	-	-	-	-	-	2.915	-	-	3.635	-	-	2.716	-	-	-	-	-	2.716
GPS III SV 03-10 A&AS	-	-	-	-	-	3.818	-	-	8.308	-	-	8.107	-	-	-	-	-	8.107

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Exhibit P-5, Cost Analysis: PB 2023 Air Force												Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: GPSIII / GPS III Space Segment						Item Number / Title [DODIC]: GPS III Space Segment					
ID Code (A=Service Ready, B=Not Service Ready) : B												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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
GPS III SV 03-10 Other Support	-	-	-	-	-	0.240	-	-	0.240	-	-	0.240	-	-	-	-	-	0.240
<i>Subtotal: Support - GPS III Space Segment Cost</i>	-	-	-	-	-	6.973	-	-	12.183	-	-	11.063	-	-	-	-	-	11.063
Gross/Weapon System Cost	-	-	-	-	-	20.122	-	-	84.452	-	-	103.340	-	-	-	-	-	103.340

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
GPSSPC / Global Positioning (Space)

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

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	2.256	2.274	0.950	-	0.950	0.901	0.838	0.888	0.840	-	8.947
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	2.256	2.274	0.950	-	0.950	0.901	0.838	0.888	0.840	-	8.947
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	2.256	2.274	0.950	-	0.950	0.901	0.838	0.888	0.840	-	8.947

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

Description:

The Navstar Global Positioning System (GPS) provides highly accurate time, three-dimensional position, and velocity information to an unlimited number of users anywhere on or above the surface of the earth, in any weather. GPS satisfies validated Joint Service requirements for worldwide, accurate, common grid navigation for military aircraft, ships, ground vehicles and personnel. The system is comprised of three segments: (1) satellites, (2) a ground control, and (3) user equipment. The satellites broadcast high-accuracy data using precisely synchronized signals that are received and processed by user equipment installed in military platforms. The ground control network updates the navigation messages broadcast from the satellites to provide system vectors to target location or navigational way points. Funds in this line support various GPS specific production efforts associated with the ground control and user equipment segments.

KEY DATA LOADING INSTALLATION FACILITY (KLIF)/GPS SECURITY DEVICE: The KLIF facilitates the programming of black key (cryptographic) algorithms into the Selective Availability Anti-Spoofing Module (SAASM) to provide accurate positioning solutions for GPS users using secure equipment. Similar work for the Military Global Positioning System User Equipment (MGUE) is in the planning phase.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.

Funding for this exhibit is contained in 1203164SF.

Justification:

KEY DATA LOADING INSTALLATION FACILITY (KLIF)/GPS SECURITY DEVICE: FY 2023 funding provides for the programming of black key (cryptographic) algorithms into the SAASM, providing an accurate positioning solution for GPS users using security equipment. Funding will procure support for Key Data Processors (KDP), ensuring uninterrupted support to SAASM vendors. SAASM vendors are required to use government-provided KDP as part of the security architecture of GPS User Equipment.

Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force								Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs						P-1 Line Item Number / Title: HRTG00 / HERITAGE TRANSITION					

ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 1203605SF					Other Related Program Elements: N/A			
--	--	--	---	--	--	--	--	--	--	--	--

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	13.529	21.896	-	21.896	17.140	13.411	10.260	9.067	-	85.303
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	13.529	21.896	-	21.896	17.140	13.411	10.260	9.067	-	85.303
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	13.529	21.896	-	21.896	17.140	13.411	10.260	9.067	-	85.303

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

Description:

In FY 2022, P-1 Line Item HRTG00 / Heritage Transition, was a new start.

Command and Control System-Consolidated (CCS-C) is an Acquisition Category II program providing consolidated command and control (C2) capability for Milstar, Defense Satellite Communications Systems (DSCS), Advanced Extremely High Frequency (AEHF) and Wideband Global SATCOM (WGS) Military Satellite Communications (MILSATCOM) missions. CCS-C is operated by the United States Space Force (USSF) Delta 8 under USSF Space Operations Command (SpOC). In 2018, Air Force Space Command (AFSPC) mandated that all satellite programs will use Enterprise Ground Services (EGS) as the tactical satellite common platform C2 service to support spacecraft operations. This Program, Heritage Transition (HRTG), transitions CCS-C to use EGS by procuring software modifications to existing services and mission unique capabilities required to support Satellite Control Network (SCN) based SATCOM C2 systems in a modernized, cloud-enabled, common ground architecture. This transition also enables CCS-C to use EGS for satellite control through Wideband Satellite Operations Management System Network (WSOMSNet) and Global Satellite Command and Control Elements (GSCCE) to communicate with WGS satellites. In FY 2022, HRTG is a new start but a modification of the existing CCS-C system. HRTG provides adaptive, and robust SATCOM C2 by modernizing the system to a more agile architecture and providing more integrated cyber defense, while providing SATCOM mission data on a common infrastructure using common messaging schemas enabling increased situational awareness for space warfighters. HRTG provides the software modifications required to ensure the operational CCS-C system is not obsolete when the USSF completes transition to the mandatory use of EGS. There is no increase in performance envelope associated with this effort. These mission-specific efforts will be used to migrate CCS-C into EGS; R-1 Line Item 1206770SF / Enterprise Ground Services will fund efforts to provide the foundational EGS cyber-secure platform and applications enabling HRTG capability migration.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Center (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or re-purpose existing capabilities.

Funding for this exhibit is contained in PE 1203605SF.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: HRTG00 / HERITAGE TRANSITION

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203605SF	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Heritage Transition (Capability Improvement)		B		- / 0.000	- / 0.000	- / 13.529	- / 21.896	- / 0.000	- / 21.896
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 13.529	- / 21.896	- / -	- / 21.896

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Heritage Transition (Capability Improvement)		B		- / 17.140	- / 13.411	- / 10.260	- / 9.067	- / -	- / 85.303
P-40	Total Gross/Weapon System Cost				- / 17.140	- / 13.411	- / 10.260	- / 9.067	- / -	- / 85.303

*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: The HRTG efforts modernizes the C2 system of record for DSCS, WGS, AEHF, and MILSTAR by transitioning CCS-C to a modern architecture to provide satellites in four constellations into the Common Operating Picture (COP) for space warfighters. This COP enables Battlespace Awareness across the space domain by monitoring space assets for Indications & Warnings (I&W) of ongoing or impending adversary attack. Transitioning CCS-C to EGS will also improve response to threats via agility of capability delivery through modernized architectures, increased cyber resiliency with integrated cyber defense systems, and reduced operator training through shared and common interfaces and underlying operations principles. These constellations provide worldwide flexible, high data rate and long haul communications for Marines, Soldiers, Sailors, Airmen, the White House Communication Agency, the US State Department, international partners, and other special users. By transitioning CCS-C to EGS, this effort provides a significant benefit to DSCS III, Milstar, WGS, and AEHF by improving threat responsiveness, system defense and battlespace awareness for the Nation's warfighters through procurement and operation of the satellite constellations and the associated control systems.

FY 2023 funds continue the transition of MILSATCOM mission unique software to the EGS environment that was initiated in FY 2022, aligning to the 2018 AFSPC direction for EGS as the tactical C2 service to support spacecraft operations. CCS-C components include, but are not limited to, support for spacecraft dynamics, simulation, mission scheduling, data libraries and data analytics. Mission unique components include, but are not limited to, mission specific automation, command processing, telemetry processing and orchestration. HRTG will implement system resiliency and situational awareness necessary to operate in the contested domain. The FY 2023 effort leverages EGS interfaces, virtualization and translation of MILSATCOM mission unique software within the operational CCS-C system to ensure compatibility with the mandated transition to the EGS. FY 2023 funds will provide improved functionality to support the Defensive Space Control mission as well as increased cybersecurity leveraging modern software environment. Activities may include, but are not limited to, software change orders modifying CCS-C foundational capabilities and mission unique software, program office support, studies, technical analysis, prototyping, non-recurring engineering, installation, technical documentation, security, quality assurance, etc. These efforts will be initiated once the CCS-C Sustainment and Resiliency (C SAR) contract is awarded to replace the current CCS-C Production and Sustainment (CPASC) contract.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: HRTG00 / HERITAGE TRANSITION	Modification Number / Title: 1 / Heritage Transition

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	13.529	21.896	0.000	21.896	17.140	13.411	10.260	9.067	-	85.303
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	13.529	21.896	0.000	21.896	17.140	13.411	10.260	9.067	-	85.303
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	13.529	21.896	0.000	21.896	17.140	13.411	10.260	9.067	-	85.303

(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 Millions)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Command and Control System - Consolidated (CCS-C) provides Satellite Control Network (SCN) based Command and Control (C2) for the Military SATCOM (MILSATCOM) constellations including MILSTAR, AEHF, WGS, and DSCS. Enterprise Ground Services (EGS) is a cloud enabled, service based, common ground architecture providing a foundation for satellite C2 programs to operate in. An additional benefit of using a common ground architecture for all satellite C2 functions is improved access to data for a Common Operating Picture (COP) and increasing space domain awareness.

Transitioning CCS-C to a modern architecture will provide 27 satellites from four constellations into this COP for space warfighters, improve agility of capability delivery through modernized architectures, increase cyber resiliency via integrated cyber defense systems, and reduce operator training by leveraging shared and common interfaces and underlying operations principles. Ongoing efforts include implementing software change orders to modify CCS-C foundational capabilities and mission unique software for the transition to EGS, transition telemetry tracking and commanding (TT&C) core functions to enterprise message bus communication, and replacing some components with EGS provided services. CCS-C components include, but are not limited to, support for spacecraft dynamics, simulation, mission scheduling, data libraries and data analytics. Software modification deliveries for the operational CCS-C system will be required as needed to ensure compatibility with the USSF mandated transition to the EGS without impacts to ongoing satellite operations. HRTG will implement system resiliency and situational awareness necessary to operate in the contested domain. Activities may include, but are not limited to, program office support, studies, technical analysis, prototyping, non-recurring engineering, installation, technical documentation, security, quality assurance, etc. Other modifications may include required procurement, non-recurring engineering, installation, configuration management, security, quality assurance and technical documentation. Future Years Defense Program (FYDP) funds will complete this transition and conduct operations transition activities.

Heritage Transition will be an Engineering Change Proposal on the current CCS-C O&S contract 4th Quarter FY 2022. Heritage Transition will be a Task Order Award on the follow-on CCS-C O&S contract in 1st Quarter FY 2024. These task orders will be incrementally funded until the HRTG mandated transition is complete by 2028. The current performance work statement (PWS) is written to emphasize agile software deliveries in a 12-month cycle. Delivery orders are estimated engineering change order implementation dates and will be more defined once Contract Data Requirement Lists (CDRLs) are agreed upon (TBD). SSC will provide EGS standards to mission programs to facilitate utilizing pre-existing hosted applications on EGS to the maximum extent. This contract mechanism is postured to support the need to develop and add software applications for employment onto EGS if there are no current applications to fit mission needs.

Milestone/Development Status

This effort is an operational modification to the existing CCS-C system that is currently in operations and sustainment. The modification leverages a five-year study completed in FY 2021 to inform the fastest, most cost-effective way to migrate MILSATCOM C2 to the EGS environment.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force										Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10					P-1 Line Item Number / Title: HRTG00 / HERITAGE TRANSITION					Modification Number / Title: 1 / Heritage Transition			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: CCS-C				Modification Type: Capability Improvement				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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> EGS/MUS Implementation/Synchronization, Software Change Orders													
B Kits													
Recurring													
EGS/MUS Implementation/Synchronization, Software Change Orders: EQUIPMENT Group B (Active)	- / -	- / -	1 / 9.667	1 / 19.187	- / -	1 / 19.187	1 / 13.542	1 / 10.315	1 / 7.632	1 / 7.730	- / -	6 / 68.073	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 9.667	- / 19.187	- / -	- / 19.187	- / 13.542	- / 10.315	- / 7.632	- / 7.730	- / -	- / 68.073	
<i>Subtotal: EGS/MUS Implementation/Synchronization, Software Change Orders</i>	- / -	- / -	- / 9.667	- / 19.187	- / -	- / 19.187	- / 13.542	- / 10.315	- / 7.632	- / 7.730	- / -	- / 68.073	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 9.667	- / 19.187	- / -	- / 19.187	- / 13.542	- / 10.315	- / 7.632	- / 7.730	- / -	- / 68.073	
Support (All Modification Items)													
GROUP B: TOTAL NONRECURRING	- / -	- / -	- / 1.934	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.934	
FFRDC	- / -	- / -	- / 0.750	- / 0.872	- / -	- / 0.872	- / 0.926	- / 0.615	- / 0.419	- / 0.434	- / -	- / 4.016	
A&AS	- / -	- / -	- / 1.149	- / 1.336	- / -	- / 1.336	- / 1.420	- / 0.944	- / 0.642	- / 0.665	- / -	- / 6.156	
OTHER GOVT	- / -	- / -	- / 0.029	- / 0.501	- / -	- / 0.501	- / 1.252	- / 1.537	- / 1.567	- / 0.238	- / -	- / 15.124	
<i>Subtotal: Support</i>	- / -	- / -	- / 3.862	- / 2.709	- / -	- / 2.709	- / 3.598	- / 3.096	- / 2.628	- / 1.337	- / -	- / 17.230	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	13.529	21.896	0.000	21.896	17.140	13.411	10.260	9.067	-	85.303	

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Exhibit P-3a, Individual Modification: PB 2023 Air Force						Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: HRTG00 / HERITAGE TRANSITION			Modification Number / Title: 1 / Heritage Transition	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Modification Item 1 of 1: EGS/MUS Implementation/Synchronization, Software Change Orders							
Manufacturer Information							
Manufacturer Name: N/A				Manufacturer Location: N/A			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 0		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: MCOMSE / Spaceborne Equip (Comsec)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	35.495	46.945	29.587	-	29.587	27.823	28.258	28.816	29.568	-	226.492
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	35.495	46.945	29.587	-	29.587	27.823	28.258	28.816	29.568	-	226.492
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	35.495	46.945	29.587	-	29.587	27.823	28.258	28.816	29.568	-	226.492

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

Description:

Space Communications Security (COMSEC) procures centrally-funded cryptographic products to operate in the space environment and for ground nodes that link to space assets. Space COMSEC equipment is a foundational element in achieving space information superiority. Space COMSEC provides cybersecurity (confidentiality, integrity, and availability) for Department of Defense (DOD) satellite platforms. Space COMSEC is an enabler for space system compliance with CNSSP No. 12 - Cybersecurity Policy of Space Systems Used to Support National Security Missions. Space COMSEC provides products and lifecycle sustainment support to all DoD satellite systems and commercial systems supporting DOD missions. The Air Force, Space Force, DOD, and Intelligence Community require the capability to secure, collect, process, store, and disseminate an uninterrupted flow of information, while denying an adversary the ability to intercept, collect, destroy, interpret, or manipulate our information flows. Secure communication allows the DOD to achieve and maintain decision superiority, the key to successful application of the military instrument of national power in modern, high-tempo, full-spectrum operations. Space COMSEC equipment protects information such as warfighter positions, mission planning, target strikes, commanders' orders, intelligence, force strength, and force readiness. When an adversary is capable of interpretation, manipulation, or destruction of the information used by the warfighter, DoD military forces will suffer significant and/or devastating mission degradation that can result in loss of life and resources and/or exceptionally grave damage to national security. Space COMSEC enables secure Command and Control (C2) of satellites and prevents unauthorized access and destruction. It enables secure transmission of satellite systems' health and status telemetry data (satellite health and relative orbital position) to ground control stations, thus protecting critical information about the capabilities of DoD satellite systems. The capability of a system must be protected from an adversary to avoid exploitation of a system weakness/limitation, knowledge of which could assist an adversary in a successful mission against DoD military forces. Space COMSEC also provides secure transmission of information collected by satellite sensors (mission data), which provides the warfighter an integrated view of the battle space. Space COMSEC provides for secure SATCOM, positioning, navigation, timing, weather, nuclear detection and early warning missions. Space COMSEC procures crypto end items and logistics elements to support developing and operational space systems. The Space Modular Common Cryptography (SMCC) Program of Record procures a family of common cryptography (crypto) solutions that integrate Telemetry, Tracking, and Command (TT&C), Mission Data (MD), and Transmission Security (TRANSEC) key stream functions for the Air Force, Space Force, DoD, and Intelligence Community space systems. The SMCC Program's mission is to secure communication links and the data transmitted, incorporate standard interfaces that leverage existing technologies, provide a basis for future technologies, and design solutions that are scalable, upgradeable, and reconfigurable.

Funding for this exhibit contained in program element (PE) 1203140F.

In FY2021 P-1 Line Item MCOMSE/Spaceborne Equipment (COMSEC) efforts were transferred to Appropriation 3022 , Procurement, Space Forces, from Appropriation 3021, Procurement, Air Force, due to the creation of a new Appropriation for Space Force.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
MCOMSE / Spaceborne Equip (Comsec)

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	Spaceborne Equip (Comsec)	P-5a	A		- / -	- / 35.495	- / 46.945	- / 29.587	- / -	- / 29.587
P-40	Total Gross/Weapon System Cost				- / -	- / 35.495	- / 46.945	- / 29.587	- / -	- / 29.587

*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:

1. Space Communications Security (COMSEC): Procures centrally-funded cryptographic products to operate in the space environment and for ground nodes that link to space assets. Funding provides for the production of Space COMSEC products to meet developing and operational space program needs. Space COMSEC products include End Crypto Units (ECU), Embedded Solutions (ES), TRANSEC and ancillaries. Due to low volume production quantities and high reliability design, Space COMSEC products can range in price from 10K per unit to 2M per unit. As a commodity item, Space COMSEC procures standard crypto products which enable minimized lifecycle footprints. Space COMSEC procures from multiple crypto vendors; however, with the low volume consumption by space programs, the space crypto industry base is less than a dozen companies. Items procured during execution may change based on critical equipment needed to support current Air Force mission requirements. Contractor support costs are included as part of the Space COMSEC products funding line in order to provide for end item operational capability. FY22 funding increased to fix procurement for space-rated crypto devices that support USSF SMC satellite launches/systems and procurement of corresponding ground station products and lifecycle support elements.

a. Logistics: FY23 funding provides for higher contracting costs to address growing Space Force and Air Force Space COMSEC requirements. Space COMSEC products typically have a 20 to 40 year lifecycle to support development, launch and operation of multiple Air Force, Space Force, and DoD space systems. Space COMSEC is provided as Government Furnished Equipment (GFE) to the space system developing contractors and operational ground stations. Space COMSEC products are high cost critical assets and are organically sustained to include component level maintenance exclusively by the Air Force. Logistics procures the necessary lifecycle sustainment elements required to meet the 40 year mission requirements. Logistics elements include, but not limited to, specialized test sets, certified training materials and courses, maintenance manuals, provisioning, spare components, and modifications. Contractor support costs are included as part of the Space COMSEC logistics funding line in order to provide for end item operational capability.

b. Aerospace Vehicle Equipment (AVE) Products: FY23 funding provides Telemetry, Tracking, and Command (TT&C) and mission data cryptographic products to operate in the space environment. AVE procurement of reduced size, weight, and power space qualified satellite cybersecurity COMSEC products supports development, integration, launch and operations in DOD National Security Space System's LargeSat, SmallSat, CubeSat, and hosted payload applications.

c. Ground Operating Equipment (GOE) Products: FY23 funding provides cryptographic products for ground nodes which link to space satellite National Security Space System satellite platforms. GOE provides the procurement of ground equipment with corresponding space algorithms required to communicate with DOD satellite systems. Procurement of Telemetry, Tracking, and Command (TT&C), Mission Data and Satellite Communication (SATCOM) cybersecurity ground application COMSEC products enable secure command and control and secure data transmission protecting DOD space systems' capabilities (Position, Navigation, Timing, Early Warning, SATCOM, Remote Sensing, and Intelligence, Surveillance and Reconnaissance)

2. Space Modular Common Cryptography (SMCC): Reduces space programs development and life cycle costs by providing a common, modular and upgradable cryptographic solution set. SMCC is fully endorsed by NSA as the preferred solution for all emerging National Security Space Systems. The SMCC Program awarded a 5-year production contract in FY21 to procure Common Crypto Solutions for Air Force, Space Force, DOD, and Intelligence Community Space Programs. FY23 funding provides for the production of SMCC units for satellite programs including GPS III F and Next Generation Geosynchronous-Overhead Persistent Infrared (NGG-OPIR). SMCC meets NSA mandated space algorithm transition/ modernization guidance to mitigate evolving threats/vulnerabilities and will provide modernized cryptographic capabilities.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: MCOMSE / Spaceborne Equip (Comsec)			Item Number / Title [DODIC]: Spaceborne Equip (Comsec)		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:			
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)				-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)				-	35.495	46.945	29.587	-	29.587
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				-	35.495	46.945	29.587	-	29.587
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				-	35.495	46.945	29.587	-	29.587
<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 Millions)				-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - 1. Space Communications Security (COMSEC) (PE 1203140F) Cost																		
Recurring Cost																		
a. Logistics	-	-	-	1.974	4	7.897	2.047	4	8.189	3.195	1	3.195	-	-	-	3.195	1	3.195
b. AVE ^(†)	-	-	-	0.068	22	1.500	0.256	20	5.110	0.468	26	12.160	-	-	-	0.468	26	12.160
c. GOE ^(†)	-	-	-	0.054	107	5.727	0.063	195	12.305	0.056	169	9.432	-	-	-	0.056	169	9.432
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	15.124	-	-	25.604	-	-	24.787	-	-	-	-	-	24.787
<i>Subtotal: Hardware - 1. Space Communications Security (COMSEC) (PE 1203140F) Cost</i>	-	-	-	-	-	15.124	-	-	25.604	-	-	24.787	-	-	-	-	-	24.787
Hardware - 2. Space Modular Common Crypto (SMCC) (PE 1203140F) Cost																		
Recurring Cost																		
SMCC	-	-	-	1.698	12	20.371	1.123	19	21.341	4.800	1	4.800	-	-	-	4.800	1	4.800
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	20.371	-	-	21.341	-	-	4.800	-	-	-	-	-	4.800
<i>Subtotal: Hardware - 2. Space Modular Common Crypto (SMCC) (PE 1203140F) Cost</i>	-	-	-	-	-	20.371	-	-	21.341	-	-	4.800	-	-	-	-	-	4.800
Gross/Weapon System Cost	-	-	-	-	-	35.495	-	-	46.945	-	-	29.587	-	-	-	-	-	29.587

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MC0MSE / Spaceborne Equip (Comsec)	Item Number / Title [DODIC]: Spaceborne Equip (Comsec)
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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>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
b. AVE		2021	MULTIPLE / MULTIPLE	Various	AFMC	Jun 2021	Aug 2022	22	0.068	Y		
b. AVE		2022	MULTIPLE / MULTIPLE	Various	AFMC	Jun 2022	Aug 2023	20	0.256	Y		
b. AVE		2023	MULTIPLE / MULTIPLE	Various	AFMC	Jun 2023	Aug 2024	26	0.468	Y		
c. GOE		2021	MULTIPLE / MULTIPLE	Various	AFMC	Nov 2020	Feb 2022	107	0.054	Y		
c. GOE		2022	MULTIPLE / MULTIPLE	Various	AFMC	Feb 2022	May 2023	195	0.063	Y		
c. GOE		2023	MULTIPLE / MULTIPLE	Various	AFMC	May 2023	Jul 2024	169	0.056	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: MILSAT / MILSATCOM
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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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	15.795	24.333	29.333	-	29.333	45.033	25.747	17.285	17.734	-	175.260
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	15.795	24.333	29.333	-	29.333	45.033	25.747	17.285	17.734	-	175.260
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	15.795	24.333	29.333	-	29.333	45.033	25.747	17.285	17.734	-	175.260

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

Description:

MILITARY SATELLITE COMMUNICATIONS (MILSATCOM) joint service systems collectively provide a broad range of satellite communication capabilities, including secure, jam-resistant, 24-hour worldwide communications to meet essential strategic, tactical and general purpose operational requirements. MILSATCOM terminals support communications requirements for the President and Secretary of Defense, unified and specified commanders, uniformed services and defense agencies.

SSC is procuring and fielding Protected Tactical Waveform (PTW) capable modems to meet the Ground Multiband Terminal (GMT) and other Tactical SATCOM mission requirements. The Air Force / Army Anti-jam Modem (A3M) is the program of record for development, procurement, and fielding of the PTW capability. The United States Space Force is teamed with the Army to expand the competitive industry base and gain volume cost savings of a common Line Replaceable Unit (LRU) modem. The A3M modem will provide high throughput and enhanced anti-jam capability in benign and contested environments to prevent the disruption of communications from electronic jamming at identified threat levels of the Wideband Global SATCOM (WGS) Operational Requirements Document (ORD). The A3M modem meets the Internet Protocol (IP) mandate is forward compatible with the future Protected Tactical SATCOM (PTS), and contains a National Security Agency (NSA) certified End Cryptographic Unit (ECU). The A3M modem integrates into the GMT and other Tactical SATCOM terminals in operation using industry standard interfaces and is operator configurable to the different antenna sizes currently in operation.

A3M Procurement funding includes depot tooling, continues establishment of the Key Loading and Initialization Facility (KLIF), and procures equipment to support a systems integration checkout capability (i.e. Systems Integration Lab (SIL)). Funding for depot tooling includes but not limited to workstations, fixtures, or any other equipment that may be used for intake, rework, restock and testing of A3M LRU modems. The KLIF is used to initialize and restore the modem with NSA provided cryptologic keys before being sent to the field. The SIL is used to test changes in software or TTPs (Tactics, Techniques and Procedures) on real terminals and modems, but in a laboratory environment, before making changes to fielded systems. Funding also purchases additional Protected Tactical Enterprise Service (PTES) KLIF Host equipment, A3M warehousing equipment, shipping containers, and A3M test equipment and repair work spaces. Funding covers shipping of A3M cases to field units and return shipping of un-modified GMT equipment cases and fielding support. A3M purchases and delivers technical data and initial spares in a combination of spare modems and subassembly parts equivalent to 10% sparing. A3M's Indefinite Quantity Indefinite Delivery (IDIQ) contract enables future fielding for additional SATCOM users.

GLOBAL BROADCAST SERVICE (GBS): This Space Force-led joint program implements a worldwide high-capacity satellite broadcast information system to provide a continuous, one-way, high-speed, high-volume flow of classified and unclassified intelligence products (full motion video, imagery, data) to garrisoned, deployed or moving forces. GBS Receive Suites provide lower-echelon Air Force users with efficient high-data-rates via satellite-hosted GBS packages. GBS Procurement funding includes the necessary updates to address two GBS limitations, Transmission Security (TRANSEC) and Contested, Degraded and Operationally-Limited (CDO) capabilities. First, NSA, via the Committee on National Security Systems (CNSS) Policy 12 and CNSS instruction 1200, requires U.S. Government agencies to employ TRANSEC systems to protect information transmitted/received by National Security Space (NSS) systems. Second, the Chief Space Operations' (CSO) Satellite Communications (SATCOM) Vision mandates a

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: MILSAT / MILSATCOM
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>SATCOM Enterprise that can operate through a CDO environment. A3M delivers TRANSEC and Anti-Jam capabilities required to address both GBS' limitations. Full procurement and fielding of the protected modems will begin in FY 2024. In FY 2023, \$6.910M was realigned to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206431SF, Advanced EHF MILSATCOM (SPACE) to support a critical update needed to integrate the Global Broadcast Service (GBS) with the Army-Air Force Anti-Jam Modem (A3M). Procurement of Anti-Jam and TRANSEC-enabled modems is planned to resume in FY 2024.</p> <p>Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.</p> <p>Funding for this exhibit is contained in Program Element (PE) 1203601SF MILSATCOM TERMINALS</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
MILSAT / MILSATCOM

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	AFWET		A		- / -	- / 11.277	- / 10.406	- / 11.962	- / -	- / 11.962
P-5	GBS		A		- / -	- / -	- / 0.494	- / 0.000	- / 0.000	- / 0.000
P-5	PTW Modems		B		- / -	- / 4.518	- / 13.433	- / 17.371	- / -	- / 17.371
P-40	Total Gross/Weapon System Cost				- / -	- / 15.795	- / 24.333	- / 29.333	- / -	- / 29.333

*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:
 AIR FORCE WIDEBAND ENTERPRISE TERMINALS (AFWET) TERMINAL MODERNIZATION: AFWET terminals form the Satellite Communications (SATCOM) backbone of the DoD Information Network (DoDIN), operating over Wideband Global SATCOM (WGS), Defense Satellite Communications System, commercial and Allied satellites. These Enterprise terminals support the command and control requirements of Combatant Commanders worldwide and the communication requirements of the President, Secretary of Defense, Department of State (DoS), US strategic and tactical forces, and the North Atlantic Treaty Organization. The Air Force is responsible for terminal equipment at Air Force operated and maintained Enterprise ground terminal locations.

In FY 2023, funding will extend the life of the system, modernize operational suitability, safety and effectiveness, and maintain high interoperability with other DoD, Army, Navy, and Air Force strategic and tactical terminals.

For 6 of 27 new terminals yet to be installed and commissioned; AFWET Terminal Modernization includes: Terminal installation, engineering, integration and site preparation, radomes, initial spares and acceptance testing. Installation, integration and site preparation costs change substantially based on location.

For 21 of 27 installed and already commissioned new terminals; AFWET Maintenance Upgrades and Sustainment includes: Facility Infrastructure Monitoring Systems (FIMS), power and communication infrastructure, Interconnect Facility (ICF) installations which provide incidental increases in capability, allowing for full utilization of WGS capabilities, compliance with directives on the usage of Internet Protocol, adherence to Unified Capabilities Requirements, compliance with Defense Information Systems Agency (DISA) and National Security Agency directives and more efficient and effective usage of satellite resources for jam-resistant and anti-scintillation wideband links.

AFWET Product Support includes: Product Support Services (PSS) skillsets required for specialized SATCOM fielding and training supporting Terminal Modernization.
 AFWET Other Support includes: Advisory and Assistance Services (A&AS), system engineering, and other related activities supporting successful program execution.

Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, etc.

PROTECTED TACTICAL WAVEFORM (PTW), AIR FORCE - ARMY ANTI-JAM MODEM (A3M):
 FY 2023 effort includes purchase of Protective Tactical Waveforms (PTW) capable modems, preparation of fielding for the PTW Modems, depot labor at Tobyhanna Army Depot, and installation into multiple types of tactical terminals, and distribution of the modems to the needs of GMT USSF users and USAF users.

A3M A&AS includes: systems engineering support for depot standup, integration and testing of the Key Loading and Initialization Facility (KLIF), SIL design and development, and other related activities supporting modems, installation and fielding, and successful program execution.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: MILSAT / MILSATCOM
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

Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, etc.

GLOBAL BROADCAST SERVICE (GBS): GBS (P-5), was a New Start in FY 2022. There are no FY 2023 funds requested at this time. Full procurement and fielding of the protected modems will begin FY 2024. The integration of these modems into the GBS Receive Suites will enable military forces to continue receiving high-volume, real time intelligence products in contested environments by ensuring they meet the National Security Agency (NSA) and Operational Requirement Document (ORD) requirements for Transmission Security (TRANSEC). Full procurement and fielding of the protected modems will begin in FY 2024.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: MILSAT / MILSATCOM			Item Number / Title [DODIC]: AFWET		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:			
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)				-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)				-	11.277	10.406	11.962	-	11.962
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				-	11.277	10.406	11.962	-	11.962
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				-	11.277	10.406	11.962	-	11.962
<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 Millions)				-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - AFWET Cost																		
Recurring Cost																		
Terminal Modernization	-	-	-	-	-	7.029	-	-	3.200	-	-	2.774	-	-	-	-	-	2.774
Maintenance Upgrade/Sustainment	-	-	-	-	-	1.311	-	-	0.000	-	-	4.459	-	-	-	-	-	4.459
Product Support	-	-	-	-	-	1.368	-	-	5.600	-	-	2.594	-	-	-	-	-	2.594
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	9.708	-	-	8.800	-	-	9.827	-	-	-	-	-	9.827
<i>Subtotal: Hardware - AFWET Cost</i>	-	-	-	-	-	9.708	-	-	8.800	-	-	9.827	-	-	-	-	-	9.827
Software - AFWET Cost																		
Recurring Cost																		
Advisory and Assistance Services (A&AS)	-	-	-	-	-	0.736	-	-	0.606	-	-	0.733	-	-	-	-	-	0.733
Other Support	-	-	-	-	-	0.833	-	-	1.000	-	-	1.402	-	-	-	-	-	1.402
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	1.569	-	-	1.606	-	-	2.135	-	-	-	-	-	2.135
<i>Subtotal: Software - AFWET Cost</i>	-	-	-	-	-	1.569	-	-	1.606	-	-	2.135	-	-	-	-	-	2.135
Gross/Weapon System Cost	-	-	-	-	-	11.277	-	-	10.406	-	-	11.962	-	-	-	-	-	11.962

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: MILSAT / MILSATCOM			Item Number / Title [DODIC]: GBS		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:			
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (<i>Units in Each</i>)				-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-	-	0.494	0.000	0.000	0.000
Less PY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)				-	-	0.494	0.000	0.000	0.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)				-	-	0.494	0.000	0.000	0.000
<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 Millions</i>)				-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - GBS Cost																		
Recurring Cost																		
GBS-TRANSEC modem	-	-	-	-	-	-	-	-	0.494	-	-	0.000	-	-	0.000	-	-	0.000
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.494	-	-	0.000	-	-	0.000	-	-	0.000
<i>Subtotal: Hardware - GBS Cost</i>	-	-	-	-	-	-	-	-	0.494	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	0.494	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: MILSAT / MILSATCOM			Item Number / Title [DODIC]: PTW Modems		
ID Code (A=Service Ready, B=Not Service Ready) : B						MDAP/MAIS Code:			
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (<i>Units in Each</i>)				-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-	4.518	13.433	17.371	-	17.371
Less PY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)				-	4.518	13.433	17.371	-	17.371
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)				-	4.518	13.433	17.371	-	17.371
<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 Millions</i>)				-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - A3M Cost Cost																		
Recurring Cost																		
Depot Tooling	-	-	-	-	-	-	-	-	5.079	-	-	-	-	-	-	-	-	-
Modem Purchase (includes Labor & Shipping)	-	-	-	0.080	40	3.218	0.060	40	2.395	0.060	212	12.726	-	-	-	0.060	212	12.726
Deployment & Training	-	-	-	-	-	-	-	-	-	-	-	0.649	-	-	-	-	-	0.649
Subtotal: Recurring Cost	-	-	-	-	-	3.218	-	-	7.474	-	-	13.375	-	-	-	-	-	13.375
Subtotal: Hardware - A3M Cost Cost	-	-	-	-	-	3.218	-	-	7.474	-	-	13.375	-	-	-	-	-	13.375
Support - A3M Cost Cost																		
Systems Engineering & Integration (SE&I)	-	-	-	-	-	-	-	-	3.584	-	-	2.506	-	-	-	-	-	2.506
Technical Mission Analysis	-	-	-	-	-	1.300	-	-	1.000	-	-	-	-	-	-	-	-	-
Other Support	-	-	-	-	-	-	-	-	1.375	-	-	1.490	-	-	-	-	-	1.490
Subtotal: Support - A3M Cost Cost	-	-	-	-	-	1.300	-	-	5.959	-	-	3.996	-	-	-	-	-	3.996
Gross/Weapon System Cost	-	-	-	-	-	4.518	-	-	13.433	-	-	17.371	-	-	-	-	-	17.371

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
MSSBIR / SBIR High (Space)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** 0604441F **Other Related Program Elements:** 1206441F

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	145.891	154.526	148.666	-	148.666	39.757	0.000	0.000	0.000	-	488.840
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	145.891	154.526	148.666	-	148.666	39.757	0.000	0.000	0.000	-	488.840
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	145.891	154.526	148.666	-	148.666	39.757	0.000	0.000	0.000	-	488.840

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

Description:

Note: The flyaway unit cost is not included on the P-40 exhibit because there are multiple P-5 Cost Analysis exhibits.

The Space Based Infrared System's (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the United States (US), its deployed forces and its allies. SBIRS enhances detection and improves reporting of intercontinental ballistic missiles, submarine launched ballistic missiles, and tactical ballistic missiles. SBIRS provides increased detection and tracking performance in order to meet requirements in the Operational Requirements Document (ORD). SBIRS will consist of satellites in Geosynchronous Earth Orbit (GEO) and in Highly Elliptical Orbit (HEO) with an integrated, centralized ground station serving all SBIRS space elements, Defense Support Program (DSP) satellites and other program related support activities. The HEO payloads operate on a classified host.

SBIRS 3-6 SATELLITES:

SBIRS GEO-3 and 4 satellites are derivatives of the first two GEO satellites which were delivered on the SBIRS Engineering and Manufacturing Development (EMD) contract (Research, Development, Test, and Evaluation (RDT&E) funded). The GEO-3 and 4 satellite production efforts are necessary to meet constellation requirements. In Dec 2008, the Department approved the procurement of GEO-3 and 4 satellites and the HEO-3 and 4 payloads using a Cost-Plus contract. In order to minimize the number of storage actions and costs associated with aligning the SBIRS launches to the earliest assigned Initial Launch Capability (ILC) date of Apr 2016, the GEO-3 satellite completed production and was placed into storage in Jul 2015. The GEO-4 satellite launched as the third flight (GEO-4 Flight-3) in Jan 2017. The GEO-3 (Flight-4) satellite launched in Jan 2018. GEO-3 and 4 are fully mission capable, having completed Air Force Space Command (AFSPC) and United States Strategic Command (USSTRATCOM) operational acceptance and are certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations and technical intelligence operations.

SBIRS GEO-5 and 6 satellites are derivatives of the GEO-3 and 4 satellites and will be replacements for GEO-1 and 2. A four phased contract approach awarded non-recurring engineering and parts obsolescence using advanced procurement funds in Sep 2012, followed by award of long lead items in Feb 2013, full production in Jun 2014, and technical refresh in Jun 2015. The GEO-5 and 6 technical refresh contract modification modernizes the existing spacecraft bus design to improve commonality across United States Space Force (USSF) and Government satellite programs, and enable compatibility with multiple launch vehicles. The full production effort includes 2 satellites with persistent infrared missile and threat warning payloads, launch vehicle integration, launch and early orbit test, dual communication band modification (unified SBand), and contractor operations support through operational acceptance. The GEO-5 satellite launched on 18 May 2021.

For the GEO 5-6 block buy, the FY 2013 National Defense Authorization Act (NDAA) authorizes six years of incremental production funding and limits the incrementally funded contract obligation to 3,900M. The years of incremental funding are FY 2013-2018. Advance procurement was appropriated in FY 2011 and FY 2012. GEO 5-6 advance procurement and incremental funding are attributed to FY 2013 for

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0604441F	Other Related Program Elements: 1206441F
Line Item MDAP/MAIS Code: N/A		
<p>the purposes of identifying full funding for procurement end items. Each year of appropriation FY 2013-2018 is in two parts, the incrementally funded contract amount and annual program support costs. The incrementally funded amount complies with the NDAA cap.</p> <p>SBIRS HEO-3 and 4 payloads are replenishments for HEO-1 and 2 payloads, which were delivered on the SBIRS EMD contract (RDT&E funded). The HEO-3 and 4 payloads are on-orbit and certified for ITW/AA missile warning operations and certified for technical intelligence operations. HEO-1 and HEO-2 are in a storage/residual operational mode.</p> <p>Total GEO 3-4 3020/3021 funds are 2,794.947M. Total GEO 5-6 3020/3021/3022 funds are 3,368.3M Total HEO 3-4 3020/3021 funds are 1,146.672M. Total S2E2 3080/3020/3021/3022 funds are 682.368M.</p> <p>SBIRS SURVIVABLE ENDURABLE EVOLUTION (S2E2): The S2E2 effort replaces the DSP only Mobile Ground System (MGS); S2E2 consists of the SBIRS Mobile Ground Terminal (SMGT) and Parabolic Dish Subsystem (PDSS). The current MGS is the only US Survivable and Endurable (S/E) Tactical Warning and Attack Assessment (TW/AA) system (S/E TW/AA) and is the critical Situation Monitoring element in three national-level architectures: Integrated TW/AA System, Chairman, Joint Chiefs of Staff (CJCS) Critical Nodes, and Nuclear Command and Control System (NCCS). USSTRATCOM needs U.S. Space Command's global S/E TW/AA operational capabilities to meet President of the United States, Joint Staff, Combatant Commander, and Forward User requirements for continuous, persistent, and enduring TW/AA non-imaging infrared for Missile Warning (MW) and Nuclear Detection (NUDET) reporting across all phases of military operations. The program will deliver a minimum of 4 SMGTs that will have the modified capability in accordance with the USSPACECOM Survivable/Endurable Concept of Operations (CONOPS), signed 19 November 2021, to include SBIRS GEO 5/6 processing and Tracking, Telemetry, and Command (TT&C), and the new protected and wide band satellite communication (SATCOM) capable terminals. Funding also provides Interim Contractor Support (ICS). The delivery of this effort enables the weapon system to process DSP, SBIRS GEO (1-6), and Global Positioning System (GPS) and Nuclear Detonation (NUDET) data and missions while addressing long-standing obsolescence, supportability, and cyber-security concerns as well as improved capability to withstand a high altitude electromagnetic pulse (HEMP) per MIL-STD-188-125-2. In addition, training software, and integration of the Universal Ground NUDET Terminal (UGNT) and the new protected and wide band SATCOM capable terminals are included. Finally, this effort includes all activities required to pivot the weapon system to meet the CONOPS change directed by USSPACECOM and signed on 19 November 2021. Additionally, includes operations location setup, transportation of hardware to include, but not limited to, Systems Engineering and Technical Assistance (SETA) enterprise activities which provide intra-and inter-program office support to support S2E2 operations.</p> <p>SBIRS MOBILE AND FIXED SITE COMMUNICATIONS/ELECTRONIC REPLACEMENT: This effort procures DSP and SBIRS assets to maintain the Data Processing Sub-System. Fixed site examples include, but are not limited to, legacy receiver, antenna drive system, Spacecraft Simulator RF, Mission Control Station (MCS) display, Rapid Delog (instantaneous translation of computer data to a human-readable format), Sybase database obsolescence, communications and network routers, and switches and time server replacements. Mobile system examples include, but are not limited to, aging radio frequency communications equipment, aging antenna equipment, aging electrical equipment and cabling, and unsupported data processing subsystem components.</p> <p>Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose capabilities.</p> <p>Funding for this exhibit contained in PE 1203915SF</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs **P-1 Line Item Number / Title:** MSSBIR / SBIR High (Space)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** 0604441F **Other Related Program Elements:** 1206441F

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	GEO 5-6		A		- / -	- / 94.048	- / 87.592	- / 39.441	- / -	- / 39.441
P-5	SBIRS Survivable Endurable Evolution (S2E2)		A		- / -	- / 32.591	- / 58.855	- / 71.000	- / -	- / 71.000
P-3a	1 / SBIRS Mobile System & Fixed Comm Electronics Upgrades (Reliability & Maintainability)		B		- / 0.000	- / 19.252	- / 8.079	- / 38.225	- / 0.000	- / 38.225
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 145.891	- / 154.526	- / 148.666	- / -	- / 148.666

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GEO 5-6		A		- / -	- / -	- / -	- / -	- / -	- / -
P-5	SBIRS Survivable Endurable Evolution (S2E2)		A		- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / SBIRS Mobile System & Fixed Comm Electronics Upgrades (Reliability & Maintainability)		B		- / 28.366	- / 0.000	- / 0.000	- / -	- / -	- / 93.922
P-40	Total Gross/Weapon System Cost				- / 39.757	- / 0.000	- / 0.000	- / 0.000	- / -	- / 488.840

*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:
 GEO 5-6: FY 2023 funding enables completion of GEO-6 on-orbit testing, classified enhancement capabilities, and continued program/product support.
 S2E2: FY 2023 funding will continue to fund program baseline that will deliver S2E2 through Initial Operating Capability (IOC) and bring SBIRS GEO and GPS NUDET detection into the USSTRATCOM Nuclear Command, Control, and Communication (NC3) endurable mission. The program will deliver a minimum of 4 SMGTs that will have the modified capability in accordance with the USSPACECOM Survivable/Endurable CONOPS signed 19 Nov 2021 to include SBIRS GEO 5/6 processing and TT&C, and the new protected and wide band SATCOM capable terminals. Funding also provides ICS.
 Mobile & Fixed Site Communications and Electronics Upgrades: FY 2023 funding enables common GEO capable antennas required to provide Survivable GEO downlink capability and reduces Survivable Relay Ground Station (SRGS) sustainment posture risk.
 Additionally, FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, etc.
Efforts with funding starting in FY 2024 through FY 2027 are summarized on the P-40. Not all details of this funding are included in this P-40 exhibit set. A summary of the excepted details is as follows:
 (a) FY 2024 Cost Delta: 11.391 million
 (b) FY Total Cost Delta: 394.918 million

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Exhibit P-5, Cost Analysis: PB 2023 Air Force											Date: April 2021						
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)					Item Number / Title [DODIC]: GEO 5-6						
ID Code (A=Service Ready, B=Not Service Ready) : A											MDAP/MAIS Code:						
Resource Summary				Prior Years		FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Procurement Quantity (Units in Each)				-		-		-		-		-		-			
Gross/Weapon System Cost (\$ in Millions)				-		94.048		87.592		39.441		-		39.441			
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-			
Net Procurement (P-1) (\$ in Millions)				-		94.048		87.592		39.441		-		39.441			
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-			
Total Obligation Authority (\$ in Millions)				-		94.048		87.592		39.441		-		39.441			
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																	
Initial Spares (\$ in Millions)				-		0.000		-		-		-		-		-	
Gross/Weapon System Unit Cost (\$ in Millions)				-		-		-		-		-		-		-	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Space Vehicle - GEO 5-6 Cost																		
Recurring Cost																		
GEO 5-6 Hardware	-	-	-	-	-	2.790	-	-	4.606	-	-	-	-	-	-	-	-	-
GEO 5-6 Integration and Assembly	-	-	-	-	-	15.813	-	-	26.098	-	-	-	-	-	-	-	-	-
GEO 5-6 Enterprise Systems Engineering & Integration (SE&I)	-	-	-	-	-	1.493	-	-	1.153	-	-	1.242	-	-	-	-	-	1.242
Technical Mission Analysis	-	-	-	-	-	8.380	-	-	7.718	-	-	0.304	-	-	-	-	-	0.304
Subtotal: Recurring Cost	-	-	-	-	-	28.476	-	-	39.575	-	-	1.546	-	-	-	-	-	1.546
Non Recurring Cost																		
GEO 5-6 Launch Vehicle and Range Integration	-	-	-	-	-	6.199	-	-	8.197	-	-	2.667	-	-	-	-	-	2.667
Subtotal: Non Recurring Cost	-	-	-	-	-	6.199	-	-	8.197	-	-	2.667	-	-	-	-	-	2.667
Subtotal: Space Vehicle - GEO 5-6 Cost	-	-	-	-	-	34.675	-	-	47.772	-	-	4.213	-	-	-	-	-	4.213
Checkout and Launch - GEO 5-6 Cost																		
GEO 5-6 Launch Ops & Checkout	-	-	-	-	-	38.531	-	-	26.675	-	-	29.655	-	-	-	-	-	29.655
Interim Contractor Support (ICS)	-	-	-	-	-	16.735	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Checkout and Launch - GEO 5-6 Cost	-	-	-	-	-	55.266	-	-	26.675	-	-	29.655	-	-	-	-	-	29.655

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Exhibit P-5, Cost Analysis: PB 2023 Air Force												Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)						Item Number / Title [DODIC]: GEO 5-6					
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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Support - GEO 5-6 Cost																		
Other Support	-	-	-	-	-	0.305	-	-	4.878	-	-	0.919	-	-	-	-	-	0.919
FFRDC	-	-	-	-	-	0.983	-	-	1.412	-	-	0.143	-	-	-	-	-	0.143
A&AS	-	-	-	-	-	2.819	-	-	6.855	-	-	4.511	-	-	-	-	-	4.511
<i>Subtotal: Support - GEO 5-6 Cost</i>	-	-	-	-	-	4.107	-	-	13.145	-	-	5.573	-	-	-	-	-	5.573
Gross/Weapon System Cost	-	-	-	-	-	94.048	-	-	87.592	-	-	39.441	-	-	-	-	-	39.441

Remarks:

GEO 5-6: GEO 5-6: Funding for FY 2023 enables completion of on-orbit testing for GEO-6 which is scheduled to launch on 22 Jun 2022. Additionally, funding for FY 2023 launch and early orbit testing, classified enhancement capabilities, and continued program/product support.

The incrementally funded amount includes the above Total Space Vehicle Cost (less: SE&I, Launch Vehicle & Range Integration, and Interim Contractor Support) and Launch Ops & Checkout Cost. Total incrementally funded amount of 2,729.420M complies with FY 2013 NDAA limiting procurement cost to 3,900M.

The FY 2013 gross weapon system cost includes advance procurement amount of 243.314M appropriated in FY 2011 and 243.500M appropriated in FY 2012.

Total GEO 5-6 3020/3021/3022 funds are 3,368.3M

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Exhibit P-5, Cost Analysis: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)	Item Number / Title [DODIC]: SBIRS Survivable Endurable Evolution (S2E2)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	32.591	58.855	71.000	-	71.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	32.591	58.855	71.000	-	71.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	32.591	58.855	71.000	-	71.000

(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 Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - SBIRS Survivable Endurable Evolution (S2E2) Cost																		
Recurring Cost																		
Systems Engineering & Integration (SE&I)	-	-	-	-	-	5.239	-	-	4.519	-	-	5.732	-	-	-	-	-	5.732
Technical Mission Analysis	-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	-	-	-	5.239	-	-	4.519	-	-	5.732	-	-	-	-	-	5.732
Non Recurring Cost																		
S2E2 SMGT DSP/ GEO Stereo Capability Modification	-	-	-	-	-	15.274	-	-	19.793	-	-	44.013	-	-	-	-	-	44.013
S2E2 SMGT	-	-	-	-	-	0.000	-	-	14.959	-	-	2.946	-	-	-	-	-	2.946
Subtotal: Non Recurring Cost	-	-	-	-	-	15.274	-	-	34.752	-	-	46.959	-	-	-	-	-	46.959
Subtotal: Hardware - SBIRS Survivable Endurable Evolution (S2E2) Cost	-	-	-	-	-	20.513	-	-	39.271	-	-	52.691	-	-	-	-	-	52.691
Software - SBIRS Survivable Endurable Evolution (S2E2) Cost																		
Non Recurring Cost																		
S2E2 Software	-	-	-	-	-	11.807	-	-	16.132	-	-	13.335	-	-	-	-	-	13.335
Subtotal: Non Recurring Cost	-	-	-	-	-	11.807	-	-	16.132	-	-	13.335	-	-	-	-	-	13.335

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Exhibit P-5, Cost Analysis: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)	Item Number / Title [DODIC]: SBIRS Survivable Endurable Evolution (S2E2)
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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Software - SBIRS Survivable Endurable Evolution (S2E2) Cost</i>	-	-	-	-	-	11.807	-	-	16.132	-	-	13.335	-	-	-	-	-	13.335
Support - SBIRS Survivable Endurable Evolution (S2E2) Cost																		
Other Support	-	-	-	-	-	0.050	-	-	0.162	-	-	0.225	-	-	-	-	-	0.225
FFRDC	-	-	-	-	-	0.000	-	-	0.000	-	-	-	-	-	-	-	-	-
A&AS	-	-	-	-	-	0.221	-	-	3.290	-	-	4.749	-	-	-	-	-	4.749
<i>Subtotal: Support - SBIRS Survivable Endurable Evolution (S2E2) Cost</i>	-	-	-	-	-	0.271	-	-	3.452	-	-	4.974	-	-	-	-	-	4.974
Gross/Weapon System Cost	-	-	-	-	-	32.591	-	-	58.855	-	-	71.000	-	-	-	-	-	71.000

Remarks:

Space Based Infrared System (SBIRS) Survivable Endurable Evolution (S2E2): SBIRS capable Mobile Ground Stations (MGS) require the interim deliverables over this period as described below.

-FY 2017-2024 - Funds a total 5 SMGTs of which a minimum of 4 SMGTs will meet the modified capability in accordance with CONOPS signed 19 Nov 2021. S2E2 SMGT cost moved to non-recurring to match current program strategy.

-FY 2017-2024 - includes integration of SBIRS GEO 5/6, and the new protected and wide band SATCOM capable terminals in the program baseline to bring SBIRS GEO and Global Positioning System Nuclear Detection into the USSTRATCOM.

-FY 2017-2024 - includes operations location setup, transportation of hardware to include, but not limited to, Systems Engineering and Technical Assistance enterprise activities which provide intra-and inter-program office support to support S2E2 operations.

Total S2E2 Funding for FY 2011-2024 \$682.368M

Quantity 5

Gross Unit Cost \$136.474M

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)	Modification Number / Title: 1 / SBIRS Mobile System & Fixed Comm Electronics Upgrades

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	19.252	8.079	38.225	0.000	38.225	28.366	0.000	0.000	-	-	93.922
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	19.252	8.079	38.225	0.000	38.225	28.366	0.000	0.000	-	-	93.922
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	19.252	8.079	38.225	0.000	38.225	28.366	0.000	0.000	-	-	93.922

(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 Millions)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SBIRS MOBILE AND FIXED SITE COMMUNICATIONS/ELECTRONIC REPLACEMENT: This effort procures Defense Support Program (DSP) and SBIRS assets to maintain the ground system equipment. Fixed site examples include, but are not limited to, legacy receiver, antenna drive system, Spacecraft Radio Frequency (RF) simulator, Mission Control Station (MCS) display, Rapid Delog (instantaneous translation of computer data to a human-readable format), Sybase database obsolescence, communications and network routers, and switches and time server replacements. Mobile system examples include, but are not limited to, aging radio frequency communications equipment, aging antenna equipment, aging electrical equipment and cabling, and unsupported data processing subsystem components. Funding also provides for Program Office and related support activities to include but not limited to, Systems Engineering and Technical Assistance (SETA) enterprise activities which provides intra-and inter-program office support. Funding for this effort is in program element 1203915F and 1203915SF.

Milestone/Development Status

Program office has recurring DSP and SBIRS requirements that are planned and programmed on an annual basis to maintain the ground system equipment.

FY23 and FY24 funding amounts were granted adds of \$30M and \$20M respectively to address network, mission processing, cyber security and crypto obsolescence mitigation projects with the SBIRS mission systems.

Milestone/Development Status

Program office has reoccurring DSP and SBIRS requirements that is planned and programmed on an annual basis to maintain the ground system equipment.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)	Modification Number / Title: 1 / SBIRS Mobile System & Fixed Comm Electronics Upgrades

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Models of Systems Affected: SBIRS	Modification Type: Reliability & Maintainability	Related RDT&E PEs:
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Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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> SBIRS Mobile Sys & Fixed Comm Elect Upgrades												
B Kits												
Recurring												
SBIRS Mobile Sys & Fixed Comm Elect Upgrades:EQUIPMENT Group B (Active)	- / -	1 / 19.113	1 / 7.614	1 / 37.814	- / -	1 / 37.814	1 / 28.366	- / -	- / -	- / -	- / -	4 / 92.907
<i>Subtotal: Recurring</i>	- / -	- / 19.113	- / 7.614	- / 37.814	- / -	- / 37.814	- / 28.366	- / -	- / -	- / -	- / -	- / 92.907
<i>Subtotal: SBIRS Mobile Sys & Fixed Comm Elect Upgrades</i>	- / -	- / 19.113	- / 7.614	- / 37.814	- / -	- / 37.814	- / 28.366	- / -	- / -	- / -	- / -	- / 92.907
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / 19.113	- / 7.614	- / 37.814	- / -	- / 37.814	- / 28.366	- / -	- / -	- / -	- / -	- / 92.907

Support (All Modification Items)												
A&AS	- / -	- / 0.064	- / 0.091	- / 0.080	- / -	- / 0.080	- / -	- / -	- / -	- / -	- / -	- / 0.235
FFRDC	- / -	- / 0.041	- / 0.047	- / 0.041	- / -	- / 0.041	- / -	- / -	- / -	- / -	- / -	- / 0.129
OTHER GOVT	- / -	- / 0.034	- / 0.327	- / 0.290	- / -	- / 0.290	- / -	- / -	- / -	- / -	- / -	- / 0.651
<i>Subtotal: Support</i>	- / -	- / 0.139	- / 0.465	- / 0.411	- / -	- / 0.411	- / -	- / -	- / -	- / -	- / -	- / 1.015

Installation												
<i>Modification Item 1 of 1:</i> SBIRS Mobile Sys & Fixed Comm Elect Upgrades												
<i>Subtotal: Installation</i>	- / -	1 / 0.000	1 / 0.000	1 / 0.000	- / -	1 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	4 / 0.000

Total												
Total Cost (Procurement + Support + Installation)	0.000	19.252	8.079	38.225	0.000	38.225	28.366	0.000	0.000	-	-	93.922

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MSSBIR / SBIR High (Space)	Modification Number / Title: 1 / SBIRS Mobile System & Fixed Comm Electronics Upgrades

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 1: SBIRS Mobile Sys & Fixed Comm Elect Upgrades

Manufacturer Information

Manufacturer Name: Lockheed Martin Space Systems	Manufacturer Location: Colorado Springs, CO
Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 0

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates	Jun 2021	Jun 2022	Jun 2023				
Delivery Dates	Jun 2021	Jun 2022	Jun 2023				

Installation Information

Method of Implementation: Contractor Facility

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2022	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2023	- / -	- / -	- / -	1 / 0.000	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	1 / 0.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	1 / 0.000
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.000	1 / 0.000	1 / 0.000	- / -	1 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	4 / 0.000

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4
Out	0	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203109SF	Other Related Program Elements: 1203605SF
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Line Item MDAP/MAIS Code: 345

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	45.371	46.833	-	46.833	47.169	49.266	50.238	51.547	-	290.424
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	45.371	46.833	-	46.833	47.169	49.266	50.238	51.547	-	290.424
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	45.371	46.833	-	46.833	47.169	49.266	50.238	51.547	-	290.424

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

Description:

In FY 2022, Program Element 1203109N, Satellite Communications (SPACE), Appropriation 1507N Weapons Procurement, Navy; Budget Activity 02; BLI 2433 Fleet Satellite Comm Follow-On efforts were transferred to U.S. Space Force (USSF) Program Element 1203109SF Narrowband Satellite Communications; Appropriation 3022F, Procurement, Space Force; Budget Activity 01; BSA 10; P-1 Line Item MUOS00 Mobile User Objective System (MUOS), due to the transfer of the MUOS program from U.S. Navy to USSF.

The Mobile User Objective System (MUOS) provides a worldwide, multi-service population of mobile and fixed-site terminal users with ultra-high frequency (UHF), narrowband, and beyond line-of-sight satellite communications (SATCOM). MUOS significantly increases performance and capacity in support of critical Combatant Command SATCOM priorities. MUOS is the replacement system for the UHF Follow-on (UFO) system, which is currently beyond its design life. MUOS consists of Space, Ground, and User Entry Segments. MUOS reached full operational capability October 2019.

The Space Segment consists of five geosynchronous satellites, one of which is an on-orbit spare, and provides both a legacy UHF payload, which is backward compatible with UFO, and a Wideband Code Division Multiple Access (WCDMA) payload, which provides 3G cellular-like capability. The User Entry Segment consists of the MUOS waveform that is ultimately integrated into MUOS-capable terminals.

The cost for MUOS Ground Segment upgrades varies depending on the complexity of software defects being addressed and unique configuration of hardware and software requirements being fielded at each of the six MUOS ground sites within each given year. The MUOS Ground Segment upgrades address cybersecurity and lifecycle management issues at each of the six MUOS ground sites.

The Ground Segment or System consists of four world-wide Radio Access Facilities (RAFTs) (Wahiawa, Hawaii; Northwest Chesapeake, Virginia; Niscemi, Italy; and Geraldton, Australia) and two Satellite Control Facilities (Port Hueneme, California, and Schriever Space Force Base (SFB), Colorado). Each RAF includes three 60 ft. antennas and over 50 equipment racks which house a total of 5,000 major hardware components and 250 software applications across the MUOS Program. The RAF in Hawaii includes a Network Management Facility (NMF). The RAFs in Hawaii and Virginia each include a Switching Facility (SF). All four RAFs and two Satellite Control Facilities are considered Ground Sites.

In addition to providing UHF SATCOM for the Department of Defense (DoD), the Space Force has the overall responsibility to deliver the end-to-end (E2E) MUOS capability to the warfighter. This responsibility involves systems engineering, integration, and test management of all MUOS system-of-system activities, to include the integration of the MUOS waveform into MUOS-capable terminals and the subsequent terminal certification testing.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203109SF	Other Related Program Elements: 1203605SF
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Line Item MDAP/MAIS Code: 345

Beginning in FY 2017, MUOS's focus has been upgrading all four Radio Access Facilities and two Satellite Control Facilities to address ongoing cybersecurity threats, hardware and software obsolescence, and operational deficiency issues.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) is transforming the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

Funding for this exhibit is contained in PE 1203109SF.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force	Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 1203109SF	Other Related Program Elements: 1203605SF
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Line Item MDAP/MAIS Code: 345

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Mobile User Objective System (Other)		B		- / 0.000	- / 0.000	- / 45.371	- / 46.833	- / 0.000	- / 46.833
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 45.371	- / 46.833	- / -	- / 46.833

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Mobile User Objective System (Other)		B		- / 47.169	- / 49.266	- / 50.238	- / 51.547	- / -	- / 290.424
P-40	Total Gross/Weapon System Cost				- / 47.169	- / 49.266	- / 50.238	- / 51.547	- / -	- / 290.424

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

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

Justification:
 The FY 2023 funding will address obsolescence and cybersecurity vulnerabilities within the MUOS Ground Segment. Emerging cybersecurity threats, increasing cybersecurity requirements, and the evolution of denial-of-service threats against DoD systems have made it imperative for the MUOS ground system to keep pace.

Funding is to procure Ground System updates for each of the six ground sites in each fiscal year through the FYDP to correct hardware and software deficiencies. The ground system updates address hardware/software defect resolution and hardware degradation. The hardware/software updates are installed at each ground site as part of the MUOS operational end item requirements; ground system defect resolution includes associated engineering, integration, test, and delivery efforts to address cybersecurity vulnerabilities, and corrects issues to ensure readiness levels support the warfighter narrowband SATCOM requirements. To address hardware degradation, obsolete items will be replaced in phases in each fiscal year and can include MUOS Transec Controllers, Anti-Jam Modems, GPS-based Timing and Frequency Distribution System, Earth Terminal Interface Signal Processing (ETISP), Microsoft OS-based workstations and servers, DSN Gateway, High Assurance Internet Protocol Encryptors (HAIPE), and back-up tape drives/storage arrays.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System	Modification Number / Title: 1 / Mobile User Objective System

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	45.371	46.833	0.000	46.833	47.169	49.266	50.238	51.547	-	290.424
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	45.371	46.833	0.000	46.833	47.169	49.266	50.238	51.547	-	290.424
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	45.371	46.833	0.000	46.833	47.169	49.266	50.238	51.547	-	290.424

(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 Millions)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

MUOS Ground System Updates are to correct functional and cyber defects as well as address hardware and software obsolescence.

Funding is for five Ground System updates for each of the four Radio Access Facilities and three Ground System updates for each of the two Satellite Control Facilities in each fiscal year through the FYDP. In FY 2022, each of the six ground sites had five upgrades. The Ground System updates address hardware and software defect resolution as well as hardware degradation. The hardware/software updates are installed at each ground site as part of the MUOS operational end item requirements; ground system defect resolution includes associated engineering, integration, test, and delivery efforts to address cybersecurity vulnerabilities, and corrects issues to ensure readiness levels support the warfighter narrowband SATCOM requirements. To address hardware degradation, obsolete items will be replaced in phases in each fiscal year and can include MUOS Transec Controllers, Anti-Jam Modems, GPS-based Timing and Frequency Distribution System, Earth Terminal Interface Signal Processing (ETISP), Microsoft OS-based workstations and servers, DSN Gateway, High Assurance Internet Protocol Encryptors (HAIPE), and back-up tape drives/storage arrays.

Additionally, funding is for integration and testing of the necessary hardware and software upgrade options which address system deficiencies.

Milestone/Development Status

Development is on-track.

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Exhibit P-3a, Individual Modification: PB 2023 Air Force										Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10					P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System					Modification Number / Title: 1 / Mobile User Objective System			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: None				Modification Type: Other				Related RDT&E PEs: 1203605SF, 1203109SF					
Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
RDT&E PE #													
1203109SF	- / -	- / -	- / 112.012	- / 165.892	- / -	- / 165.892	- / 277.713	- / 521.579	- / 671.276	- / 587.324	- / -	- / 2,335.796	
Procurement													
Modification Item 1 of 6: Detachment Delta (Schriever SFB) NAVSOC													
A Kits													
Recurring													
Detachment Delta (Schriever SFB) NAVSOC:INSTALL KITS Group A (Active)	- / -	- / -	5 / 0.831	3 / 0.860	- / -	3 / 0.860	3 / 0.865	3 / 0.905	3 / 0.922	3 / 0.947	- / -	20 / 5.330	
Subtotal: Recurring	- / -	- / -	- / 0.831	- / 0.860	- / -	- / 0.860	- / 0.865	- / 0.905	- / 0.922	- / 0.947	- / -	- / 5.330	
Subtotal: Detachment Delta (Schriever SFB) NAVSOC	- / -	- / -	- / 0.831	- / 0.860	- / -	- / 0.860	- / 0.865	- / 0.905	- / 0.922	- / 0.947	- / -	- / 5.330	
Modification Item 2 of 6: Geraldton Ground Site													
A Kits													
Recurring													
Geraldton Ground Site:INSTALL KITS Group A (Active)	- / -	- / -	5 / 6.302	5 / 6.516	- / -	5 / 6.516	5 / 6.559	5 / 6.860	5 / 6.995	5 / 7.179	- / -	30 / 40.411	
Subtotal: Recurring	- / -	- / -	- / 6.302	- / 6.516	- / -	- / 6.516	- / 6.559	- / 6.860	- / 6.995	- / 7.179	- / -	- / 40.411	
Subtotal: Geraldton Ground Site	- / -	- / -	- / 6.302	- / 6.516	- / -	- / 6.516	- / 6.559	- / 6.860	- / 6.995	- / 7.179	- / -	- / 40.411	
Modification Item 3 of 6: HQ (Port Hueneme) NAVSOC													
A Kits													
Recurring													
HQ (Port Hueneme) NAVSOC:INSTALL KITS Group A (Active)	- / -	- / -	5 / 0.934	3 / 0.966	- / -	3 / 0.966	3 / 0.973	3 / 1.017	3 / 1.037	3 / 1.064	- / -	20 / 5.991	
Subtotal: Recurring	- / -	- / -	- / 0.934	- / 0.966	- / -	- / 0.966	- / 0.973	- / 1.017	- / 1.037	- / 1.064	- / -	- / 5.991	
Subtotal: HQ (Port Hueneme) NAVSOC	- / -	- / -	- / 0.934	- / 0.966	- / -	- / 0.966	- / 0.973	- / 1.017	- / 1.037	- / 1.064	- / -	- / 5.991	
Modification Item 4 of 6: Niscemi Ground Site													
A Kits													
Recurring													
Niscemi Ground Site:INSTALL KITS Group A (Active)	- / -	- / -	5 / 6.352	5 / 6.568	- / -	5 / 6.568	5 / 6.611	5 / 6.915	5 / 7.051	5 / 7.236	- / -	30 / 40.733	
Subtotal: Recurring	- / -	- / -	- / 6.352	- / 6.568	- / -	- / 6.568	- / 6.611	- / 6.915	- / 7.051	- / 7.236	- / -	- / 40.733	
Subtotal: Niscemi Ground Site	- / -	- / -	- / 6.352	- / 6.568	- / -	- / 6.568	- / 6.611	- / 6.915	- / 7.051	- / 7.236	- / -	- / 40.733	
Modification Item 5 of 6: Northwest (VA) Ground Site													

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Exhibit P-3a, Individual Modification: PB 2023 Air Force										Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10					P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System					Modification Number / Title: 1 / Mobile User Objective System			
ID Code (A=Service Ready, B=Not Service Ready) : B							MDAP/MAIS Code:						
Models of Systems Affected: None				Modification Type: Other				Related RDT&E PEs: 1203605SF, 1203109SF					
Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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													
Northwest (VA) Ground Site:INSTALL KITS Group A (Active)	- / -	- / -	5 / 8.659	5 / 8.953	- / -	5 / 8.953	5 / 9.012	5 / 9.425	5 / 9.611	5 / 9.864	- / -	30 / 55.524	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 8.659	- / 8.953	- / -	- / 8.953	- / 9.012	- / 9.425	- / 9.611	- / 9.864	- / -	- / 55.524	
<i>Subtotal: Northwest (VA) Ground Site</i>	- / -	- / -	- / 8.659	- / 8.953	- / -	- / 8.953	- / 9.012	- / 9.425	- / 9.611	- / 9.864	- / -	- / 55.524	
Modification Item 6 of 6: Wahiawa Ground Site													
A Kits													
Recurring													
Wahiawa Ground Site:INSTALL KITS Group A (Active)	- / -	- / -	5 / 20.240	5 / 20.927	- / -	5 / 20.927	5 / 21.066	5 / 22.031	5 / 22.467	5 / 23.059	- / -	30 / 129.790	
<i>Subtotal: Recurring</i>	- / -	- / -	- / 20.240	- / 20.927	- / -	- / 20.927	- / 21.066	- / 22.031	- / 22.467	- / 23.059	- / -	- / 129.790	
<i>Subtotal: Wahiawa Ground Site</i>	- / -	- / -	- / 20.240	- / 20.927	- / -	- / 20.927	- / 21.066	- / 22.031	- / 22.467	- / 23.059	- / -	- / 129.790	
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / -	- / 43.318	- / 44.790	- / -	- / 44.790	- / 45.086	- / 47.153	- / 48.083	- / 49.349	- / -	- / 277.779	
Installation													
Modification Item 1 of 6: Detachment Delta (Schriever SFB) NAVSOC	- / -	- / -	5 / 0.248	3 / 0.222	- / -	3 / 0.222	3 / 0.227	3 / 0.232	3 / 0.236	3 / 0.241	- / -	20 / 1.406	
Modification Item 2 of 6: Geraldton Ground Site	- / -	- / -	5 / 0.420	5 / 0.426	- / -	5 / 0.426	5 / 0.434	5 / 0.429	5 / 0.437	5 / 0.446	- / -	30 / 2.592	
Modification Item 3 of 6: HQ (Port Hueneme) NAVSOC	- / -	- / -	5 / 0.248	3 / 0.220	- / -	3 / 0.220	3 / 0.224	3 / 0.227	3 / 0.232	3 / 0.236	- / -	20 / 1.387	
Modification Item 4 of 6: Niscemi Ground Site	- / -	- / -	5 / 0.396	5 / 0.401	- / -	5 / 0.401	5 / 0.409	5 / 0.408	5 / 0.416	5 / 0.424	- / -	30 / 2.454	
Modification Item 5 of 6: Northwest (VA) Ground Site	- / -	- / -	5 / 0.267	5 / 0.270	- / -	5 / 0.270	5 / 0.275	5 / 0.283	5 / 0.289	5 / 0.295	- / -	30 / 1.679	
Modification Item 6 of 6: Wahiawa Ground Site	- / -	- / -	5 / 0.474	5 / 0.504	- / -	5 / 0.504	5 / 0.514	5 / 0.534	5 / 0.545	5 / 0.556	- / -	30 / 3.127	
<i>Subtotal: Installation</i>	- / -	- / -	30 / 2.053	26 / 2.043	- / -	26 / 2.043	26 / 2.083	26 / 2.113	26 / 2.155	26 / 2.198	- / -	160 / 12.645	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	45.371	46.833	0.000	46.833	47.169	49.266	50.238	51.547	-	290.424	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System	Modification Number / Title: 1 / Mobile User Objective System

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 1 of 6: Detachment Delta (Schriever SFB) NAVSOC

Manufacturer Information

Manufacturer Name: General Dynamics	Manufacturer Location: Scottsdale, AZ
Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 2

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026
Delivery Dates		Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026	Jan 2027

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	5 / 0.248	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.248
FY 2023	- / -	- / -	- / -	3 / 0.222	- / -	3 / 0.222	- / -	- / -	- / -	- / -	- / -	3 / 0.222
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.227	- / -	- / -	- / -	- / -	3 / 0.227
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.232	- / -	- / -	- / -	3 / 0.232
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.236	- / -	- / -	3 / 0.236
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.241	- / -	3 / 0.241
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 0.248	3 / 0.222	- / -	3 / 0.222	3 / 0.227	3 / 0.232	3 / 0.236	3 / 0.241	- / -	20 / 1.406

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	2	2	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	0	20
Out	0	-	-	-	-	-	2	2	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	0	20

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System Modification Number / Title: 1 / Mobile User Objective System

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

Modification Item 2 of 6: Geraldton Ground Site

Manufacturer Information

Manufacturer Name: General Dynamics Manufacturer Location: Scottsdale, AZ

Administrative Leadtime (in Months): 1 Production Leadtime (in Months): 2

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026
Delivery Dates		Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026	Jan 2027

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	5 / 0.420	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.420
FY 2023	- / -	- / -	- / -	5 / 0.426	- / -	5 / 0.426	- / -	- / -	- / -	- / -	- / -	5 / 0.426
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.434	- / -	- / -	- / -	- / -	5 / 0.434
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.429	- / -	- / -	- / -	5 / 0.429
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.437	- / -	- / -	5 / 0.437
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.446	- / -	5 / 0.446
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 0.420	5 / 0.426	- / -	5 / 0.426	5 / 0.434	5 / 0.429	5 / 0.437	5 / 0.446	- / -	30 / 2.592

Installation Schedule

PYS	Q1	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				TC	Tot
		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	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30
Out	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System Modification Number / Title: 1 / Mobile User Objective System

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

Modification Item 3 of 6: HQ (Port Hueneme) NAVSOC

Manufacturer Information

Manufacturer Name: General Dynamics Manufacturer Location: Scottsdale, AZ
 Administrative Leadtime (in Months): 1 Production Leadtime (in Months): 2

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026
Delivery Dates		Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026	Jan 2027

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	5 / 0.248	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.248
FY 2023	- / -	- / -	- / -	3 / 0.220	- / -	3 / 0.220	- / -	- / -	- / -	- / -	- / -	3 / 0.220
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.224	- / -	- / -	- / -	- / -	3 / 0.224
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.227	- / -	- / -	- / -	3 / 0.227
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.232	- / -	- / -	3 / 0.232
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.236	- / -	3 / 0.236
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 0.248	3 / 0.220	- / -	3 / 0.220	3 / 0.224	3 / 0.227	3 / 0.232	3 / 0.236	- / -	20 / 1.387

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	2	2	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	0	20
Out	0	-	-	-	-	-	2	2	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	0	20

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force											Date: April 2021																									
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System						Modification Number / Title: 1 / Mobile User Objective System																								
ID Code (A=Service Ready, B=Not Service Ready) : B											MDAP/MAIS Code:																									
Modification Item 4 of 6: Niscemi Ground Site																																				
Manufacturer Information																																				
Manufacturer Name: General Dynamics											Manufacturer Location: Scottsdale, AZ																									
Administrative Leadtime (in Months): 1											Production Leadtime (in Months): 2																									
Dates		FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027										
Contract Dates						Nov 2021				Nov 2022				Nov 2023				Nov 2024				Nov 2025				Nov 2026										
Delivery Dates						Jan 2022				Jan 2023				Jan 2024				Jan 2025				Jan 2026				Jan 2027										
Installation Information																																				
Method of Implementation: Contract Field Team																																				
Installation Cost		Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total																							
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021		-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-					
FY 2022		-	/	-	5 / 0.396	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.396	-	/	-			
FY 2023		-	/	-	-	/	-	5 / 0.401	-	/	-	-	/	-	5 / 0.401	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.401	-	/	-		
FY 2024		-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.409	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.409	-	/	-			
FY 2025		-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.408	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.408	-	/	-			
FY 2026		-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.416	-	/	-	-	/	-	-	/	-	5 / 0.416	-	/	-			
FY 2027		-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	5 / 0.424	-	/	-	-	/	-	5 / 0.424	-	/	-			
To Complete		-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-	-	/	-		
Total		-	/	-	5 / 0.396	-	/	-	5 / 0.401	-	/	-	5 / 0.401	-	/	-	5 / 0.409	-	/	-	5 / 0.408	-	/	-	5 / 0.416	-	/	-	5 / 0.424	-	/	-	30 / 2.454	-	/	-
Installation Schedule																																				
	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30	
Out	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System	Modification Number / Title: 1 / Mobile User Objective System

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 5 of 6: Northwest (VA) Ground Site

Manufacturer Information

Manufacturer Name: General Dynamics Manufacturer Location: Scottsdale, AZ

Administrative Leadtime (in Months): 1 Production Leadtime (in Months): 2

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026
Delivery Dates		Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026	Jan 2027

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	5 / 0.267	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.267
FY 2023	- / -	- / -	- / -	5 / 0.270	- / -	5 / 0.270	- / -	- / -	- / -	- / -	- / -	5 / 0.270
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.275	- / -	- / -	- / -	- / -	5 / 0.275
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.283	- / -	- / -	- / -	5 / 0.283
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.289	- / -	- / -	5 / 0.289
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.295	- / -	5 / 0.295
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 0.267	5 / 0.270	- / -	5 / 0.270	5 / 0.275	5 / 0.283	5 / 0.289	5 / 0.295	- / -	30 / 1.679

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30
Out	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: MUOS00 / Mobile User Objective System	Modification Number / Title: 1 / Mobile User Objective System
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ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Modification Item 6 of 6: Wahiawa Ground Site

Manufacturer Information

Manufacturer Name: General Dynamics	Manufacturer Location: Scottsdale, AZ
Administrative Leadtime (in Months): 1	Production Leadtime (in Months): 2

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Nov 2021	Nov 2022	Nov 2023	Nov 2024	Nov 2025	Nov 2026
Delivery Dates		Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026	Jan 2027

Installation Information

Method of Implementation: Contract Field Team

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	5 / 0.474	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.474
FY 2023	- / -	- / -	- / -	5 / 0.504	- / -	5 / 0.504	- / -	- / -	- / -	- / -	- / -	5 / 0.504
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.514	- / -	- / -	- / -	- / -	5 / 0.514
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.534	- / -	- / -	- / -	5 / 0.534
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.545	- / -	- / -	5 / 0.545
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.556	- / -	5 / 0.556
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 0.474	5 / 0.504	- / -	5 / 0.504	5 / 0.514	5 / 0.534	5 / 0.545	5 / 0.556	- / -	30 / 3.127

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30
Out	0	-	-	-	-	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	-	2	2	1	0	30

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force							Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs							P-1 Line Item Number / Title: NSSL00 / National Security Space Launch					

ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A			
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Line Item MDAP/MAIS Code: 176

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	3	5	3	-	3	9	8	7	8	11	54
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	996.371	1,327.347	1,056.133	-	1,056.133	2,126.485	2,521.314	2,535.711	2,283.073	3,862.257	16,708.691
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	996.371	1,327.347	1,056.133	-	1,056.133	2,126.485	2,521.314	2,535.711	2,283.073	3,862.257	16,708.691
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	996.371	1,327.347	1,056.133	-	1,056.133	2,126.485	2,521.314	2,535.711	2,283.073	3,862.257	16,708.691

(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 Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	332.124	265.469	352.044	-	352.044	236.276	315.164	362.244	285.384	351.114	309.420

Description:

The National Security Space Launch (NSSL) program is a Major Defense Acquisition Program (MDAP) Acquisition Category (ACAT) 1D program that acquires launch services to provide critical space support to satisfy Department of Defense (DoD) warfighter, national security, and other United States Government (USG) space lift missions. The NSSL program will leverage USG inter-agency and commercial cooperation by utilizing the total launch vehicle performance and maximizing on-orbit opportunities that will expedite delivery of critical capabilities. The NSSL program provides satellite delivery to specific orbits through certified Launch Vehicle (LV) providers.

NSSL procures launch services and is not a weapon system. The program provides launch capacity for the Government National Launch Forecast (NLF) requirements, but does not take ownership of any specific launch hardware. This program does not require and does not include advance procurement or initial spares. Flyaway Unit Cost is not applicable and Weapon System Unit Cost are not representative due to the mix of vehicles in the program. The requirements for NSSL launch services are derived from multiple spacecraft requirements. The Space Force procurement satisfies National Security Space (NSS) unique capabilities for NSS requirements that are beyond the scope of current commercial capability. "To Complete" projections include only known requirements at this time.

The Space Force, National Reconnaissance Office (NRO), and the National Aeronautics and Space Administration (NASA) have a coordinated strategy for certification of New Entrants to launch payloads in support of NSS and other USG requirements. The Space Force continues to actively work with potential New Entrants to reliably meet NSS requirements. The Government may award early integration contracts to ensure each potential offeror's launch system is compatible with the intended payload. The Space Force's intent is to compete as much as possible all launch service procurements where more than one certified provider can service the required orbit.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: NSSL00 / National Security Space Launch

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 176

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	National Security Space Launch	P-5a, P-21	A		- / -	3 / 996.371	5 / 1,327.347	3 / 1,056.133	- / -	3 / 1,056.133
P-40	Total Gross/Weapon System Cost				- / -	3 / 996.371	5 / 1,327.347	3 / 1,056.133	- / -	3 / 1,056.133

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

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

Justification:
 FY 2023 NSSL procurement funding will acquire launch services to provide critical space support required to satisfy Department of Defense (DoD) warfighter, national security, and other US Government space lift missions while leverage commercial innovation. Launch services include, but are not limited to, launch vehicle manufacturing, launch operations (tasks such as systems and factory engineering, program management, launch and range activities, and infrastructure), mission success incentives, recurring costs for Orbital Debris Mitigation Standard Practice, secondary payload adapters (i.e. multi-mission manifest adapters) and integration onto NSS or other USG agency procured launch services, launch propellants, independent mission assurance, evaluation and certification of potential New Entrants, early integration activities, studies and analysis, program office support and any other related activities to support mission requirements to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain.

Launch services will be ordered under the Phase 2 contracts. Launch Service Support (LSS) is part of the Phase 2 contracts and will include NSS readiness, fleet surveillance, fleet mission assurance, and unique NSS infrastructure requirements (vertical integration, classified facilities, etc).

The Space Force is responsible for funding its own missions. Space Development Agency (SDA) launch services are procured under a separate Program Element. Generally, non-Space Force launch services are funded within their respective entities (e.g. NRO, Navy).

The Space Vehicle (SV) Program offices and other partners are responsible for funding mission unique requirements including hardware, integration and testing. Funding for mission unique requirements that span across NSSL and the SV Program Office will be shared between both organizations.

FY 2020 and Prior Years funding for this exhibit is contained in PE1203953F. Beginning in FY 2021, funding was transferred to PE1203953SF.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force											Date: April 2021				
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: NSSL00 / National Security Space Launch					Item Number / Title [DODIC]: National Security Space Launch				
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:									
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total						
Procurement Quantity (Units in Each)				-	3	5	3	-	3						
Gross/Weapon System Cost (\$ in Millions)				-	996.371	1,327.347	1,056.133	-	1,056.133						
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-						
Net Procurement (P-1) (\$ in Millions)				-	996.371	1,327.347	1,056.133	-	1,056.133						
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-						
Total Obligation Authority (\$ in Millions)				-	996.371	1,327.347	1,056.133	-	1,056.133						
<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 Millions)				-	332.124	265.469	352.044	-	352.044						

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Launch - Launch End Item Cost																		
Recurring Cost																		
Launch Services ^(†)	-	-	-	171.364	3	514.092	159.762	5	798.811	181.614	3	544.843	-	-	-	181.614	3	544.843
Launch Services Support	-	-	-	-	-	288.802	-	-	296.642	-	-	296.137	-	-	-	-	-	296.137
Enterprise Systems Engineering & Integration	-	-	-	-	-	68.699	-	-	72.903	-	-	56.300	-	-	-	-	-	56.300
Mission Assurance	-	-	-	-	-	83.356	-	-	112.800	-	-	111.475	-	-	-	-	-	111.475
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	954.949	-	-	1,281.156	-	-	1,008.755	-	-	-	-	-	1,008.755
<i>Subtotal: Launch - Launch End Item Cost</i>	-	-	-	-	-	954.949	-	-	1,281.156	-	-	1,008.755	-	-	-	-	-	1,008.755
Support - Support End Item Cost																		
Other Support	-	-	-	-	-	0.239	-	-	2.761	-	-	2.844	-	-	-	-	-	2.844
A&AS	-	-	-	-	-	18.079	-	-	13.121	-	-	14.425	-	-	-	-	-	14.425
FFRDC	-	-	-	-	-	23.104	-	-	30.309	-	-	30.109	-	-	-	-	-	30.109
<i>Subtotal: Support - Support End Item Cost</i>	-	-	-	-	-	41.422	-	-	46.191	-	-	47.378	-	-	-	-	-	47.378
Gross/Weapon System Cost	-	-	-	332.124	3	996.371	265.469	5	1,327.347	352.044	3	1,056.133	-	-	-	352.044	3	1,056.133

Remarks:

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Exhibit P-5, Cost Analysis: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: NSSL00 / National Security Space Launch	Item Number / Title [DODIC]: National Security Space Launch
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:
<p>A Memorandum of Understanding (MOU) between the NRO and the Air Force, dated 7 October 2011, as updated per Addendum 2 of 13 January 2018, specifies a 60/40 Air Force/NRO share ratio for Federally Funded Research and Development Center (FFRDC) Mission Assurance. An updated Interagency Agreement (IA) between the Space and Missile Systems Center, Launch Enterprise, and the National Reconnaissance Office (NRO), dated 1 October 2019 provides a 75/25 cost share agreement for the Phase 2 Launch Service Support.</p> <p>FY22 and FY23 Launch Services and Launch Service Support amounts reflect Firm Fixed Price values based on Phase 2 average contract pricing estimate methodology.</p> <p>(t) indicates the presence of a P-5a</p>		

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Exhibit P-5a, Procurement History and Planning: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: NSSL00 / National Security Space Launch	Item Number / Title [DODIC]: National Security Space Launch
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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>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Launch Services ^(†)		2021	SpaceX/ULA / CA/CO	Various	SSC, LA AFB, CA	Mar 2021	Mar 2023	3	171.364	Y		May 2019
Launch Services ^(†)		2022	SpaceX/ULA / CA/CO	Various	SSC, LA AFB, CA	Mar 2022	Mar 2024	5	159.762	Y		May 2019
Launch Services ^(†)		2023	SpaceX/ULA / CA/CO	Various	SSC, LA AFB, CA	Jan 2023	Jan 2025	3	181.614	Y		May 2019

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2023 Air Force																Date: April 2021																			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10							P-1 Line Item Number / Title: NSSL00 / National Security Space Launch										Item Number / Title [DODIC]: National Security Space Launch																		
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021										Fiscal Year 2022										BALANCE								
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Launch Services																																			
1		2021	AF	3	0	3									A	-	-	-	-	-	-	-	-	-	-	-	-	-	3						
1		2022	AF	5	0	5																					A	-	-	-	-	-	-	-	5
1		2023	AF	3	0	3																												3	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** NSSL00 / National Security Space Launch **Item Number / Title [DODIC]:** National Security Space Launch

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2023													Fiscal Year 2024													BALANCE
O C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023													Calendar Year 2024													
							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			
Launch Services																																	
1		2021	AF	3	0	3	-	-	-	-	-	1	1	-	-	1													0				
1		2022	AF	5	0	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		0				
1		2023	AF	3	0	3				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** NSSL00 / National Security Space Launch **Item Number / Title [DODIC]:** National Security Space Launch

Cost Elements <i>(Units in Each)</i>							Fiscal Year 2025														Fiscal Year 2026														BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2024	BAL DUE AS OF 1 OCT	Calendar Year 2025														Calendar Year 2026														
							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					
Launch Services																																			
	1	2021	AF		3	3																								0					
	1	2022	AF		5	5																								0					
	1	2023	AF		3	0	3	-	-	-	3																			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 2023 Air Force									Date: April 2021				
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10					P-1 Line Item Number / Title: NSSL00 / National Security Space Launch				Item Number / Title [DODIC]: National Security Space Launch				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2023	1-8-5 For 2023	MAX For 2023	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	SpaceX/ULA - CA/CO	3	3	3	0	0	0	0	0	0	4	24	28

"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 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: NUDETS / NUDET Detection System
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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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	6.638	6.690	7.062	-	7.062	0.000	0.000	0.000	0.000	-	20.390
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	6.638	6.690	7.062	-	7.062	0.000	0.000	0.000	0.000	-	20.390
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	6.638	6.690	7.062	-	7.062	0.000	0.000	0.000	0.000	-	20.390

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

Description:

The United States Nuclear Detonation (NUDET) Detection System (USNDS) provides a near real-time worldwide, highly survivable/endurable capability to detect, locate, and report any nuclear detonations in the atmosphere of the earth or in near space. The USNDS Operational Requirements Document, dated 21 January 2004, documents the requirements for space-based NUDET detection. Space-based NUDET detection is also mandated by Public Law 110-181, dated 28 January 2008, which directs the Secretary of Defense to maintain the capability for space-based nuclear detection at or above 2008 capability levels. USNDS supports NUDET detection requirements across five mission areas: Integrated Tactical Warning and Attack Assessment (ITW/AA), Nuclear Force Management (NFM), Space Control, Treaty Monitoring, and a classified mission.

The USNDS 6 program is jointly sponsored and funded by the Department of Defense (DoD), through the Air Force, and the Department of Energy (DOE), through the National Nuclear Security Administration (NNSA) and its Nuclear Detonation Detection (NA-22) office, respectively. NNSA/NA-22 supplies USNDS space sensors as Government Furnished Equipment to the AF USNDS Program Office, which is responsible for all acquisition and systems engineering, integration and test activities on space vehicles (SVs), to include Global Positioning System (GPS) and additional hosts, and their supporting ground control segments. The AF directly funds the procurement of the USNDS 6 ground segment (described below).

DoD funds its contribution to the USNDS program in Program Element (PE) 1203913F with Research, Development, Test and Evaluation, Space Procurement AF, Procurement Space Force, and Operations and Maintenance dollars. USNDS payload integration onto GPS satellites is funded in the GPS Space Segment PE 1203265SF for GPS III SVs and PE 1203269SF for GPS IIIF SVs.

USNDS consists of space sensors and complex ground segments. The space segment sensors, funded by DOE, consists of three nuclear detection sensor payloads: the Radiation Detection Capability (RADEC) payload for Defense Support Program satellites, the Global Burst Detection payload for Medium Earth Orbit platforms (GPS satellites), and the Space Atmospheric Burst Reporting System payload for GEO platforms (classified GEO hosts). Together, these sensors and associated communications capabilities provided by the host satellites comprise the global NUDET space segment detection capability for the USNDS. Space sensors communicate NUDET indications to the fixed ground segment (the RADEC Data Processor, the Integrated Correlation and Display System) and the deployable mobile ground segment (survivable Ground NDS Terminals), and survivable/endurable Universal Ground NDS Terminals, when fielded. The ground segment provides ground receiving analysis and reporting capabilities to national authorities, commands, and forward users as well as Department of State for the Treaty Monitoring and Verification mission.

The ground control segment is being modernized and continuously improved through an incremental evolutionary acquisition approach. Fact of life upgrades include operating system changes (Red Hat Linux) to meet information assurance requirements and hardware/software technology refreshes.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: NUDETS / NUDET Detection System
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

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

Funding for this exhibit is contained in PE 1203913SF, NUDET Detection System (SPACE).

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
NUDETS / NUDET Detection System

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	NUDET Detection System		A		- / -	- / 6.638	- / 6.690	- / 7.062	- / -	- / 7.062
P-40	Total Gross/Weapon System Cost				- / -	- / 6.638	- / 6.690	- / 7.062	- / -	- / 7.062

*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:
GROUND NUCLEAR DETONATION DETECTION TERMINALS UPGRADES/SENSOR CHECKOUT ACTIVITIES: FY 2023 funding includes, but is not limited to, maintainability upgrades on the Los Alamos Portable Pulser, antenna replacement, encryption device, and hardware/software updates to address cybersecurity concerns, NUDET Detection System Analysis Package Ground Station and Laser Applications, and Oracle Database and File Servers in support of Sandia Data Acquisition & Display Systems. These upgrades will result in improved reliability and ensure the continued support of the ITW/AA and NFM to the National Command Authorities.

USNDS is classified as a Nuclear Command, Control, and Communications system. Rapid response to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: NUDETS / NUDET Detection System			Item Number / Title [DODIC]: NUDET Detection System		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (<i>Units in Each</i>)			-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)			-	6.638	6.690	7.062	-	7.062
Less PY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)			-	6.638	6.690	7.062	-	7.062
Plus CY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)			-	6.638	6.690	7.062	-	7.062
<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 Millions</i>)			-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - NUDET Detection System Cost																		
Recurring Cost																		
USNDS Ops Strings and Modem Platform Delivery	-	-	-	-	-	6.638	-	-	6.690	-	-	7.062	-	-	-	-	-	7.062
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	6.638	-	-	6.690	-	-	7.062	-	-	-	-	-	7.062
<i>Subtotal: Hardware - NUDET Detection System Cost</i>	-	-	-	-	-	6.638	-	-	6.690	-	-	7.062	-	-	-	-	-	7.062
Gross/Weapon System Cost	-	-	-	-	-	6.638	-	-	6.690	-	-	7.062	-	-	-	-	-	7.062

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
PTES00 / PTES HUB

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	6	-	6	10	8	-	-	-	24
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.000	7.406	42.464	-	42.464	56.938	56.457	11.932	0.000	-	175.197
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	7.406	42.464	-	42.464	56.938	56.457	11.932	0.000	-	175.197
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	7.406	42.464	-	42.464	56.938	56.457	11.932	0.000	-	175.197

(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 Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	7.077	-	7.077	5.694	7.057	-	-	-	7.300

Description:

The global threat of electronic warfare attacks against space systems will expand in the coming years in both number and types of weapons. Threat development will very likely focus on jamming capabilities against dedicated military satellite communications (MILSATCOM). To address this critical threat, the Space Force is developing the Protected Tactical Enterprise Service (PTES) ground system to provide worldwide, anti-jam, Low Probability of Intercept (LPI) communications for tactical warfighters. PTES will use the Protected Tactical Waveform (PTW) to provide anti-jam communications via military and commercial satellite systems for tactical users in all Services. Initially, PTES will utilize the Wideband Global SATCOM (WGS) system and may be expanded later to include commercial satellites and the Protected Tactical SATCOM (PTS) system.

The PTES program is developing a Mission Management System (MMS), a Key Management System (KMS), and Joint Hubs to enable PTW via transponded WGS satellites, with future extension to commercial SATCOM. Production-representative PTW modems for user terminals were developed by the Protected Tactical Service Field Demonstration (PTSFD) and separately acquired by each Service and by international partners.

To meet the warfighter requirements for protected tactical MILSATCOM and identified capability gaps, Procurement funding will be used to acquire the Joint Hubs necessary to operate the system at Full Operational Capability (FOC). PTES requires two Joint Hubs, at separate locations, to operate at Initial Operational Capability (IOC). Each Joint Hub requires site surveys, equipment purchases (modems, End Cryptographic Unit (ECU), etc.), equipment installation, and equipment testing.

The PTES rapid prototype addresses an operational need in the Pacific region by achieving IOC in FY 2024. IOC provides ground elements for PTW over WGS and consists of PTES installation at two WGS Gateway sites utilizing one WGS satellite. The Navy Wideband Anti-Jam Modem System (WAMS), the Air Force-Army Anti-Jam Modem (A3M), and other stakeholders rely on PTES to provide PTW ground infrastructure. The Space Force is utilizing FY 2016 National Defense Authorization Act, Section 804, Middle Tier of Acquisition for Rapid Prototyping authority to deliver a PTES Operational Demonstration meeting IOC threshold capabilities in FY 2022. At Full Operational Capability (FOC), PTES will provide worldwide PTW operations using up to all WGS satellites.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: PTES00 / PTES HUB
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Funding for this exhibit is contained in PE 1206760SF. This program has associated Research Development Test and Evaluation funding in PE 1206760SF.		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: PTES00 / PTES HUB

ID Code (A=Service Ready, B=Not Service Ready): A	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	PTES HUB				- / -	- / 0.000	- / 7.406	- / 42.464	- / -	- / 42.464
P-40	Total Gross/Weapon System Cost				- / -	- / 0.000	- / 7.406	6 / 42.464	- / -	6 / 42.464

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

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

Justification:
 In FY 2023, PTES will procure six Joint Hubs for four different Joint Hub locations that will expand Protected Tactical Waveform coverage. Each Joint Hub consists of three racks of hardware equipment that includes modems, ECUs and spares. These six primary Joint Hubs are procured with PTES procurement funds. Site surveys, equipment installation, equipment testing, integration, and Other Government Costs are included in this effort. FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: PTES00 / PTES HUB	Aggregated Items Title: PTES HUB
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
PTES HUB																				
PTES Ground	A		-	-	-	-	-	0.000	-	-	7.406	7.077	6	42.464	-	-	-	7.077	6	42.464
Subtotal: PTES HUB			-	-	-	-	-	0.000	-	-	7.406	-	-	42.464	-	-	-	-	-	42.464
Total			-	-	-	-	-	0.000	-	-	7.406	-	-	42.464	-	-	-	-	-	42.464

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

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force							Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs							P-1 Line Item Number / Title: RSLP00 / Rocket Systems Launch Program					

ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 1206860SF				
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	47.741	30.429	39.145	-	39.145	75.453	73.366	68.081	69.855	-	404.070
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	47.741	30.429	39.145	-	39.145	75.453	73.366	68.081	69.855	-	404.070
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	47.741	30.429	39.145	-	39.145	75.453	73.366	68.081	69.855	-	404.070

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

Description:

The Rocket Systems Launch Program (RSLP) procures small launch services to deliver affordable, flexible spacelift for small payloads. The small launch program complements the National Security Space Launch (NSSL) program with multiple options to acquire dedicated spacelift and rideshare services for developmental, responsive, demonstration, and small operational space vehicles. The Spacelift Capability Production Document approved 31 May 2016 supports the requirement for small spacelift capability (less than 8,000 lbs to low Earth through geostationary transfer orbit).

In FY 2019, the Department of the Air Force started using this procurement line for small launch services procurement requirements. Previously, small launch funding resided in the satellite program budgets. This change aligned launch service procurement activities with the necessary funding under Space Systems Command (SSC) Launch Enterprise. This approach is now consistent across Space Force procured launch services and allows the Space Force the flexibility to manage dynamic manifest requirements as new launch service providers emerge.

The FY 2023 funding request was reduced by \$16.0M to account for the availability of prior year execution balances.

Space acquisition must respond with speed and agility to emerging adversary threats. SSC is transforming the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

This program does not require and does not include advance procurement or initial spares. Flyaway Unit Cost is not applicable and Weapon System Unit Cost are not representative due to the mix of vehicles in the program. RSLP procures launch services and is not a weapon system. The program provides launch capacity for the Government National Launch Forecast requirements, but does not take ownership of any specific launch vehicle. The requirements for small launch services are derived from multiple spacecraft requirements.

Funding for this exhibit is contained in PE 1206860SF.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
RSLP00 / Rocket Systems Launch Program

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 1206860SF

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Rocket Systems Launch Program				- / -	- / 47.741	- / 30.429	- / 39.145	- / -	- / 39.145
P-40	Total Gross/Weapon System Cost				- / -	- / 47.741	- / 30.429	- / 39.145	- / -	- / 39.145

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

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

Justification:
FY 2023 RSLP procurement funding supports small launch and rideshare services to satisfy Department of Defense (DoD) warfighter, national security, responsive, and other Government Spacelift missions. This includes independent mission assurance, early integration activities and analysis/support, technical refresh, and allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: RSLP00 / Rocket Systems Launch Program	Aggregated Items Title: Rocket Systems Launch Program
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Small Launch Services																				
Small Launch Services	A		-	-	-	-	-	39.141	-	-	1.052	-	-	29.696	-	-	-	-	-	29.696
Congressional Add	A		-	-	-	-	-	-	-	-	20.000	-	-	-	-	-	-	-	-	-
Subtotal: Small Launch Services			-	-	-	-	-	39.141	-	-	21.052	-	-	29.696	-	-	-	-	-	29.696
Mission Assurance																				
Mission Assurance	A		-	-	-	-	-	2.100	-	-	2.652	-	-	2.700	-	-	-	-	-	2.700
Subtotal: Mission Assurance			-	-	-	-	-	2.100	-	-	2.652	-	-	2.700	-	-	-	-	-	2.700
Launch Support																				
Launch Support	A		-	-	-	-	-	6.500	-	-	6.725	-	-	6.749	-	-	-	-	-	6.749
Subtotal: Launch Support			-	-	-	-	-	6.500	-	-	6.725	-	-	6.749	-	-	-	-	-	6.749
Total			-	-	-	-	-	47.741	-	-	30.429	-	-	39.145	-	-	-	-	-	39.145

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

Remarks:
FY 2022: Congressional Add \$20M for Small Launch Services

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: SDALCH / Space Development Agency Launch
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	3	-	3	4	3	3	3	-	16
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	0.000	0.000	314.288	-	314.288	345.794	228.614	233.354	239.435	-	1,361.485
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	0.000	0.000	314.288	-	314.288	345.794	228.614	233.354	239.435	-	1,361.485
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	0.000	0.000	314.288	-	314.288	345.794	228.614	233.354	239.435	-	1,361.485

(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 Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	104.763	-	104.763	86.449	76.205	77.785	79.812	-	85.093

Description:

In FY 2023, Line Item NSSL01, Major Equipment SDA, was transferred to Appropriation 3022, Procurement, Space Force, PE 1203954SF, WSC SDALCH, from Appropriation 0300, PE 1203953SDA, Procurement, Defense-Wide. In accordance with the William M. (Mac) Thornberry National Defense Authorization Act (NDAA) for FY 2021, effective on October 1, 2022, SDA will be an element of the U.S. Space Force, and report to Assistant Secretary of the Air Force (ASAF) for Space Acquisition and Integration (ASAF/SA&I) with respect to acquisition decisions and directly to the Chief of Space Operations with respect to requirements decisions, personnel decisions, and any other matter not covered by ASAF/SA&I.

The Space Development Agency (SDA), established in 2019, has a mission that begins and ends with the war-fighter. SDA orchestrates the development, fielding, and operation of the Department of Defense's (DoD's) future threat-driven National Defense Space Architecture (NDSA) and uses novel approaches to accelerate the delivery of military space capabilities necessary to ensure U.S. technological and military advantage in space for national defense. SDA will deliver capabilities to joint war-fighting forces in two-year tranches, starting with the launch of Tranche 0 satellites. SDA will begin to procure launch services for Tranche 1 satellites in Fiscal Year 2022.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
SDALCH / Space Development Agency Launch

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

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	Space Development Agency Launch		A		- / -	- / 0.000	- / 0.000	3 / 314.288	- / -	3 / 314.288
P-40	Total Gross/Weapon System Cost				- / -	- / 0.000	- / 0.000	3 / 314.288	- / -	3 / 314.288

*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 is a new start.

This program is a new program element. FY 2022 was SDA's first year of Procurement funding, which can be found under the Appropriation 0300, Procurement, Defense-Wide, Line Item NSSL01. FY 2022 funded one launch for Tranche 1.

FY 2023 funding will procure launch services for three launches under the United States Space Force's National Security Space Launch (NSSL) program for delivery of Tranche 1 capabilities. The Space Development Agency (SDA) aims to provide responsive and resilient space capabilities in support of the Joint Force and as part of Joint All Domain Command and Control (JADC2), thus increasing our war-fighters' lethality, maneuverability, and survivability. In addition to launch services, this line may fund mission unique requirements such as launch vehicle hardware, procurement of flight representative interface hardware for pre-launch integration and test, early integration studies to document Space Vehicle-Launch Vehicle (SV-LV) interface controls and provide the predicted launch vehicle environments to the SV providers, final integration analysis and interface control documents, encapsulation and payload attach fitting mate operations of the SV integrated payload stack, and conduct launch and orbit insertion operations.

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Exhibit P-5, Cost Analysis: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SDALCH / Space Development Agency Launch	Item Number / Title [DODIC]: Space Development Agency Launch
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ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	3	-	3
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	0.000	0.000	314.288	-	314.288
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	0.000	0.000	314.288	-	314.288
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	0.000	0.000	314.288	-	314.288

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

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	104.763	-	104.763

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Launch - Space Development Agency Launch Cost																		
Non Recurring Cost																		
NSSL Launch Services	-	-	-	-	-	0.000	-	-	0.000	104.763	3	314.288	-	-	-	104.763	3	314.288
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	0.000	-	-	0.000	-	-	314.288	-	-	-	-	-	314.288
<i>Subtotal: Launch - Space Development Agency Launch Cost</i>	-	-	-	-	-	0.000	-	-	0.000	-	-	314.288	-	-	-	-	-	314.288
Gross/Weapon System Cost	-	-	-	-	-	0.000	-	-	0.000	104.763	3	314.288	-	-	-	104.763	3	314.288

Remarks:
SDA will utilize the United States Space Force (USSF) National Security Space Launch (NSSL) services. The funding represents SDA's contribution to the cost of those services.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: SPCFNC / Space Fence
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 438

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	11.279	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	11.279
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	11.279	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	11.279
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	11.279	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	11.279

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

Description:

The Space Fence effort is a ground-based sensor that improves upon the former Air Force Space Surveillance System (AFSSS), a Very High Frequency (VHF) radar operational from 1961 to 2013. The Space Fence provides a more accurate and timely detection capability of smaller orbiting objects, primarily in low-earth orbit (LEO), using higher frequency S-band. As a result, greatly expands the uncued detection and tracking capacity of the Space Surveillance Network, from around 20,000 to up to 100,000+ objects, while working in concert with other network sensors. Space Fence was delivered in FY 2020.

Space acquisition must respond with speed and agility to emerging adversary threats. The Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

Funding for this exhibit is contained in PE 1206426SF.

Justification:

No FY 2023 funding requested.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
SPCMOD / Space Mods

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** 1203906SF **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	76.046	56.325	73.957	-	73.957	106.906	81.940	57.265	50.630	-	503.069
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	76.046	56.325	73.957	-	73.957	106.906	81.940	57.265	50.630	-	503.069
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	76.046	56.325	73.957	-	73.957	106.906	81.940	57.265	50.630	-	503.069

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

Description:

Space Mods Space funding enables advanced Command and Control (C2) Battle Management, Intelligence Surveillance and Reconnaissance (ISR), and Command, Control, Communications, Computers, and Intelligence (C4I) systems to conduct effective predictive battle space awareness, facilitate precision attack, and compress the sensor-to-shooter kill chain. Permanent modifications are configuration changes to in-service systems and equipment that correct materiel or other deficiencies, or that add or delete capability. Safety modifications correct deficiencies that produce hazards to personnel, systems, or equipment. This budget line covers both new and on-going modification efforts for space equipment and systems. Modification installation funding is budgeted in the year the installation occurs.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/ classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

The following Program Elements are represented in this Budget Line Item:

PE 1203160SF DEFENSE METEOROLOGICAL SATELLITE PROGRAM (DMSP):

The DEFENSE METEOROLOGICAL SATELLITE PROGRAM (DMSP), COMMAND, CONTROL, and COMMUNICATIONS (C3) GROUND SYSTEM (GS) (DC3GS) is the ground system that supports DMSP, a fully operational program supporting a broad range of national security users who require timely and accurate global weather information. DMSP is a DoD-only assured source of global weather data providing visible and infrared cloud cover imagery (1/3 nautical miles (nm) constant resolution) and other meteorological, oceanographic, land surface, and space environmental data. DMSP satellites are flown in sun-synchronous, 450nm polar-orbits to meet mission requirements (sun-synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). Critical DC3GS component spares have been depleted, parts cannibalized, and are no longer sustainable. Therefore, DC3GS subsystems to be addressed include, but are not limited to the Link/2 Communication System, and Mission Planning and scheduling System. Current DMSP planned fly-out date is FY2027, recent guidance has been that if the system is capable, it may continue to fly past that date. This selective re-capitalization effort is intended to ensure the DC3GS remains viable and serviceable to support DMSP while it remains in flight.

PE 1203165SF NAVSTAR GPS (SPACE AND CONTROL SEGMENTS):

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>NAVSTAR GLOBAL POSITIONING SYSTEM (GPS) provides highly accurate time and three dimensional position and velocity information to an unlimited number of users anywhere on or above the surface of the earth, in any weather. This system supplies highly accurate position, velocity, timing, and United States Nuclear Detonation (NUDET) Detection System (USNDS) information to properly equipped air, land, sea, and space-based users worldwide. The GPS system consists of three segments: space, control, and user equipment. The Operational Control System (OCS) is part of the control segment and requires modifications to replace high failure rate parts and preclude system operational degradation. Without these mods, aging and obsolete equipment will excessively degrade, ultimately resulting in system failure. System failure or even partial system failure will cause a loss of operational availability and the transmission of inaccurate navigation data to worldwide users, resulting in potential loss of life and/or operational equipment, including multi-million dollar satellites. OCS is required to operate until the Next Generation Operational Control System (OCX) transitions to operations, to include support for GPS III and fielding of Military GPS User Equipment (MGUE).</p> <p>PE 1203699SF Shared Early Warning System (SEWS):</p> <p>The Shared Early Warning System (SEWS) provides accurate and timely missile warning information generated by space-based infrared sensors. This information is distributed to three combatant commands (CCMDs)--US European Command (USEUCOM), US Central Command (USCENTCOM), and US Indo-Pacific Command (USINDOPACOM); North Atlantic Treaty Organization (NATO); and multiple foreign partner nations located within each of the serviced CCMDs. U.S. forces and foreign partner nations receive missile warning data via a dedicated communications network flowing from the Centralized Distribution Facility (CDF) at Peterson SFB, CO to secondary distribution facilities located with the CCMDs and distribution hubs located in foreign partner nation operations centers. Data segregation for the foreign nation partners is maintained through the use of approved cross domain solutions with unique rule sets that reflect Office of the Secretary of Defense policy regarding the dissemination of missile warning data to foreign nations. SEWS utilizes Defense Information Systems Agency (DISA)-mandated data processing capabilities, new missile warning message formats, and cyber security requirements set forth in Department of Defense Instruction 8500.1 (DODI 8500.1).</p> <p>PE 1203873SF Ballistic Missile Defense Radars (BMD Radars):</p> <p>COBRA DANE is the most powerful, sensitive, and accurate Ground-based Midcourse Defense (GMD) radar and the premier Ballistic Missile Defense (BMD) radar. At the same time, it is the most accurate and capable phased array available to the Space Surveillance Network (SSN) for cataloging hazardous and difficult-to-track satellites and space debris objects that clutter the near-earth orbital regime that cannot be detected by most other SSN tracking assets.</p> <p>COBRA DANE has two primary missions. One is to support US Strategic Command's (USSTRATCOM) BMD mission by providing midcourse coverage for the Ballistic Missile Defense System (BMDS). COBRA DANE detects Intercontinental Ballistic Missiles (ICBMs) and Sea-Launched Ballistic Missiles (SLBMs), classifies reentry vehicles (RVs) and other missile objects, provides real-time information to the GMD Fire Control (GFC), and provides tracking of threat ballistic missiles with sufficient accuracy to commit the launch of interceptors and to update the target tracks to the interceptor while the interceptor is in flight.</p> <p>COBRA DANE's other primary mission is to support US Space Command's (USSPACECOM) Space Domain Awareness (SDA) mission by detecting, tracking, correlating, and characterizing man-made resident space objects, primarily in the Low-Earth Orbit (LEO) regime, including space debris and early observation of New Foreign Launches (NFLs). It operates as part of the larger SSN and provides metric observation data to its command and control nodes: the Combined Space Operations Center (CSpOC) and the Distributed Space Command and Control - Dahlgren (DSC2-D). COBRA DANE also supports USSPACECOM's Space Object Identification (SOI) mission by providing narrowband radar data of man-made resident space objects in the LEO regime. SOI information is used to ascertain the mission and operational status of various payloads and aids in forecasting maneuvers or deorbits. COBRA DANE mission equipment and associated sustainment suites consist of a mix of unique, custom-built components that are increasingly difficult to maintain on a 45 year old radar due to non-availability of replacement parts. Subsystems are no longer supported by the original equipment manufacturers. In addition, transmitter groups, traveling wave tubes, time delay units and all associated components and spares require replacement. Due to the limited demand rates for spares, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Without these replacements, there is a high risk that equipment failures will cause unacceptable mission downtime. Funding may be used to address Diminishing Manufacturing Sources (DMS) issues.</p> <p>PE 1203906SF Cheyenne Mountain Complex:</p> <p>The North American Aerospace Defense Command (NORAD) Cheyenne Mountain Complex (NCCMC) - Integrated Tactical Warning/Attack Assessment (ITW/AA) system provides timely, unambiguous, and continuous warning and attack assessment of air, missile and space threats to North America, and geographical theaters. This system integrates and correlates missile launch and air surveillance information</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>from certified sources to assess the nature of an enemy launch/attack and issue warnings to the President of the United States, Canadian National Leadership, United States Secretary of Defense, National Military Command Center and war-fighting Combatant Commanders. NCMC-ITW/AA and Legacy Space Command and Control (C2) systems provide NORAD/US Northern Command (USNORTHCOM), USSTRATCOM, and USSPACECOM command structures with the information management, decision aids, and connectivity required to monitor, assess, plan, and execute assigned strategic, space operations, and missile defense missions. It provides Nuclear C2 and detonation detection.</p> <p>PE 1203909SF Ballistic Missile Early Warning System (BMEWS):</p> <p>BMEWS consists of ground based, AN/FPS-132 Upgraded Early Warning Radars (UEWRs) located at Thule Air Base, Greenland; Clear Space Force Station (SFS), AK; and Royal Air Force (RAF) Fylingdales, UK which provide Missile, Defense, Missile Warning, and SDA data to multiple users. The radar system provides USSTRATCOM with credible ITW/AA data on all Intercontinental Ballistic Missiles (ICBMs) penetrating the coverage area including Launch and Predicted Impact (L&PI) data for attack assessment and response determination. The radar system also supports the SSN providing near-earth satellite surveillance and tracking, reporting observational (metric), SOI on man-made satellites and maintenance of the space catalog as required by the Combined Space Operations Center, Alternate Space Operations Center, and the National Air and Space Intelligence Center mitigating the significantly increasing potential for collisions with national assets, including manned space platforms.</p> <p>The UEWR mission equipment and associated sustainment suites consist of a mix of unique, custom-built components that are increasingly more difficult to maintain due to availability of replacement parts and obsolete Commercial-off-the-Shelf (COTS)-based subsystems that are no longer supported by the original equipment manufacturers. In addition, radar transmit and receive components, processing equipment, power distribution elements, and other radar front-end equipment are 30+ years old, highly inefficient, and require replacement. Without these replacements, there is a high risk that equipment failures will cause unacceptable mission downtime in order to troubleshoot and repair. Funding may be used to address Diminishing Manufacturing Sources (DMS) issues.</p> <p>PE 1203912SF SEA-LAUNCHED BALLISTIC MISSILE (SLBM) RADAR WARNING SYSTEM:</p> <p>The primary mission of the SLBM Radar Warning System provides USSTRATCOM with credible ITW/AA data on all SLBMs penetrating the coverage area. This data includes an estimation of L&PI locations and times. The secondary mission is to provide the Cheyenne Mountain Space Force Station, CO (CMSFS) and other users with ITW/AA data on ICBMs penetrating the coverage area. Additionally, Perimeter Acquisition Radar Attack Characterization System (PARCS) and UEWRs support the SDA mission by providing near-earth satellite surveillance, tracking, and identification as required by the Space Control Center, Alternate Space Control Center, and the Joint Intelligence Center. The sensors have an operational availability requirement of 98 percent.</p> <p>The SLBM Detection and Warning System currently consists of: a) the AN/FPQ-16 PARCS, located at Cavalier SFS, ND, and b) the AN/FPS-132 UEWRs located at Beale AFB, CA and Cape Cod SFS, MA. Additionally, there is a site for testing located in the Centralized Integration Support Facility (CISF) at Peterson Space Force Base (SFB), CO. The UEWR and PARCS mission equipment and associated sustainment suites consist of a mix of unique, custom-built components that are increasingly more difficult to maintain due to availability of replacement parts and obsolete COTS-based subsystems that are no longer supported by the original equipment manufacturers. In addition, radar transmit & receive components, processing equipment, and power distribution elements, and other radar front-end equipment are 30+ years old, highly inefficient, and require replacement. Without these replacements, there is a high risk that equipment failures will cause unacceptable mission downtime in order to troubleshoot and repair. Funding may be used to address Diminishing Manufacturing Sources (DMS) issues.</p> <p>PE 1203940SF Space Situation Awareness Operations (SSAO):</p> <p>This effort is a new start in FY 2023. Ionospheric Ground Sensors (IGS) - SSAO enables surveillance of space objects and monitoring of space environmental conditions that can affect space warfighting operations. The Space Force operates and sustains several systems and tools to monitor space environmental conditions, including Ionospheric Ground Sensors (IGS) such as Next Generation Ionosonde (NEXION), Ionospheric Scintillation Total Electron Content (TEC) Observer (ISTO), and other associated equipment. IGS contributes to Intelligence, Surveillance, Reconnaissance, Environment (ISRE), permitting full space domain knowledge, which enables Space Domain Awareness (SDA) Data Integration & Exploitation (DI&E) key to timely Battle Management Command and Control (BMC2) decision making/tasking. NEXION is a commercial-off-the-shelf (COTS) vertical incidence low-power radar sensor that obtains measurements of the ionosphere from directly overhead in the high-frequency (HF) radio bands (2-30 MHz). ISTO is a world-wide network of ground-based, passive, multi-frequency COTS receivers that measure ionospheric scintillation and total electronic content in real-time by analyzing Ultra High Frequency (UHF), Global Positioning System (GPS), and Constellation Observing System for Meteorology, Ionosphere and Climate-2 (COSMIC-2) satellite signals. In FY 2023, IGS effort transferred from PE 0305111F, Weather Service, to PE 1203940SF, Space Situational Awareness, to consolidate space-related efforts under the Space Force.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

PE 1203940SF Space Situation Awareness Operations (SSAO):

This effort is a new start in FY 2023. Solar Electro-Optical Network (SEON) - Consists of AN /FMQ-7 Solar Observing Optical Network (SOON) and Radio Solar Telescope Network (RSTN) which includes AN / FRR-95 Radio Interference Measuring Set (RIMS) and A/F24U-10 Solar Radio Spectrograph (SRS). SOON provides optical observance of the sun and RSTN provides Radio Frequency (RF) monitoring of the sun and is an all-weather, ground-based, stand-alone system for the detection of solar bursts. SEON provides 24/7 real-time data of solar activity that interferes with radio frequency bands of satellites, radars, radio communications, and power grids. Moreover, it provides data on solar phenomena that have the potential to damage military surveillance and warning satellites, damaged satellite tracking systems, and affect RF and satellite orbital prediction management. This solar data is also used in the prediction of increases or decreases in solar activity.

PE 1203940SF Space Situation Awareness Operations (SSAO):

TAPOUT is a Low Earth Orbit (LEO) tactical SDA system which consists of a Hardware Layer, a Data Layer, and an Application layer. The planned Hardware Layer is the result of 2 years of prototyping, analysis, and collaboration with industry. 16 sites have been identified to field daytime/nighttime capable ground based EO sensors which will be remotely commanded and controlled through the Data and Application layers. The Data Layer consists of multi-source and multi-INT data feeds which are aggregated at a classified level where predictive threat warning occurs. The Application Layer consists of a series of Threat Warning and C2 applications at multiple classification levels which enable monitoring, and tactical command and control of the network.

PE 1205111SF Weather Service:

This effort is a new start in FY 2023. AN/UMQ-13 Meteorological Data Station (MARK IV-B) - MARK IV-B provides warfighters tactical access to timely, accurate data from the latest generation of satellites and sensors to make mission critical decisions affecting the safety of personnel and equipment. MARK IV-B systems receive, process, display, store, and distribute interrogatable meteorological satellite (METSAT) information to operational users worldwide to support warfighter planning and execution via unclassified and classified networks. This system also provides cloud modeling and forecast validation data for the AF Weather Weapon System (AFWWS). In FY 2023, Mark IV-B effort transferred from PE 0305111F, Weather Service, to PE 1205111SF, Weather Service, to consolidate space-related efforts under Space Force.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs **P-1 Line Item Number / Title:** SPCMOD / Space Mods

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** 1203906SF **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Defense Meteorological Satellite Program (SPACE)				- / -	- / 1.105	- / 0.000	- / -	- / -	- / -
P-3a	1 / NAVSTAR GPS-OCS COTS UPGRADE (Capability Improvement)		A		- / 0.000	- / 13.887	- / 0.081	- / 5.579	- / 0.000	- / 5.579
P-40a	Shared Early Warning System (SEWS)				- / -	- / 0.361	- / 0.363	- / 0.384	- / -	- / 0.384
P-40a	Ballistic Missile Defense Radars				- / -	- / 24.185	- / 30.979	- / 18.116	- / -	- / 18.116
P-40a	Cheyenne Mountain Complex				- / -	- / -	- / -	- / 0.104	- / -	- / 0.104
P-40a	Cheyenne Mountain Complex				- / 0.000	- / 2.115	- / 2.122	- / 0.000	- / 0.000	- / 0.000
P-40a	Ballistic Missile Early Warning				- / 0.000	- / 8.439	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40a	Ballistic Missile Early Warning				- / -	- / 24.656	- / 19.831	- / 29.119	- / -	- / 29.119
P-40a	Submarine-Launched Ballistic Missile				- / 0.000	- / 0.798	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / PARCS Block 02 (Reliability & Maintainability)		A		- / -	- / 0.500	- / 2.949	- / 5.495	- / 0.000	- / 5.495
P-40a	Space Situational Awareness Operations				- / -	- / -	- / -	- / 13.888	- / -	- / 13.888
P-40a	Weather Service				- / -	- / -	- / -	- / 1.272	- / -	- / 1.272
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 76.046	- / 56.325	- / 73.957	- / -	- / 73.957

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Defense Meteorological Satellite Program (SPACE)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / NAVSTAR GPS-OCS COTS UPGRADE (Capability Improvement)		A		- / 0.000	- / 0.000	- / 0.000	- / -	- / -	- / 19.547
P-40a	Shared Early Warning System (SEWS)				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Ballistic Missile Defense Radars				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Cheyenne Mountain Complex				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Cheyenne Mountain Complex				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.237
P-40a	Ballistic Missile Early Warning				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.439
P-40a	Ballistic Missile Early Warning				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Submarine-Launched Ballistic Missile				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.798
P-3a	1 / PARCS Block 02 (Reliability & Maintainability)		A		- / 10.443	- / 9.985	- / 8.962	- / 9.141	- / -	- / 47.475
P-40a	Space Situational Awareness Operations				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Weather Service				- / -	- / -	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 106.906	- / 81.940	- / 57.265	- / 50.630	- / -	- / 503.069

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

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

Justification:

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Defense Meteorological Satellite Program (SPACE):</p> <p>PE 1203160SF: No FY 2023 funding requested.</p> <p>NAVSTAR Global Positioning (P-40a):</p> <p>FY 2023 funding procures GPS Architecture Evolution Plan (AEP), GPS Information Network (GIN), and Launch Anomaly Resolution and Disposal Operations (LADO) commercial equipment that has become obsolete/unsupportable or requires upgrades. Funding will procure equipment for the OCS ground sites including the Master Control Station (MCS), Alternate Master Control Station (AMCS), four Ground Antennas (GAs), six Monitor Stations (MSs), a contractor lab facility, and the Telecommunications Simulator Test Set (TSTS). Modifications include required procurement, nonrecurring engineering, installation, testing, configuration management, security, quality assurance and technical documentation. Funding also procures cybersecurity enhancements to mitigate shortfalls in the legacy system. Funding sustains OCS until OCX transitions to operations, to include support for GPS III and fielding of MGUE. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>This effort is funded in PE 1203165SF NAVSTAR GPS (Space and Control Segments).</p> <p>Shared Early Warning System (SEWS) (P-40a):</p> <p>FY 2023 will fund ongoing program support costs for SEWS modification efforts and will fund capital equipment replacement to replace outdated components such as, but not limited to, virtual processors, routers, intrusion detection software, network logging software, and other material solutions required for operational and cybersecurity continuity. Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. SEWS utilizes both COTS and Government Off-the-Shelf (GOTS) equipment to comply with emerging threat capability requirements. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>This effort is funded in PE 1203699S Shared Early Warning System (SEWS).</p> <p>Ballistic Missile Defense Radars (P-40a):</p> <p>COBRA DANE Block 00: FY 2023 will fund ongoing program support costs for COBRA DANE modification efforts and will fund Capital Equipment Replacement of unsupportable mission and support equipment and initial spares to include, but not limited to, Transmitter Group Replacement, Traveling Wave Tubes, Radio Frequency Level Sensors and associated components. Due to limited spares demand rates and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>This effort is funded in PE 1203873SF Ballistic Missile Defense Radars.</p> <p>Cheyenne Mountain Complex (P-40a):</p> <p>NORAD CHEYENNE MOUNTAIN COMPLEX-INTEGRATED TACTICAL WARNING/ATTACK ASSESSMENT (NCCM-ITW/AA) SYSTEMS: FY 2023 funding procures replacement for reliability and maintainability of the information systems hardware and associated systems software for the NCCM-ITW/AA system and continues program support. Program support includes acquisition support/strategy, engineering and technical expertise associated with procurement, support services, test, travel and other program-related costs associated with install of procurement equipment. Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support weapons system modifications across the active NCCM-ITW/AA Block programs. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>This effort is funded in PE 1203906SF - Cheyenne Mountain Complex.</p> <p>Ballistic Missile Early Warning System (BMEWS)/PAVE PHASED ARRAY WARNING SYSTEM (PAVE PAWS) (BPP) Block 00 & Block 03 (P-40a):</p> <p>Block 00: FY 2023 will fund ongoing program support costs associated with the Sub-Array Power Supply (SAPS) - Energy Savings (SAPS-ES) upgrade, which replaces legacy and obsolete SAPS units, and any unsupported mission and support equipment, initial spares, and lifetime buys of spares. Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>Block 03: FY 2023 will fund ongoing program support costs for UEWR modification efforts and will initiate procurement of Capital Equipment Replacement of unsupported mission and support equipment, initial spares, and lifetime buys of spares to include, but not limited to, frequency timing standards (FTS) and associated components. The Department of Defense (DoD)/Chief Information Officer (CIO) mandated the use of Timing and Synchronization System Capability (TSSC). Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>This effort is funded in PE 1203909SF Ballistic Missile Early Warning System (BMEWS) and PE 1203912SF Sea Launched Ballistic Missile (SLBM) Detection and Warning System.</p> <p>Perimeter Acquisition Radar Attack Characterization System (PARCS) Block 02 (P-3a):</p> <p>FY 2023 will fund Block 02 by continuing modifications to the PARCS system for the replacement of unsupported and unreliable components to include, but not limited to, the PARCS Mission Data Processor, Radar Transmitter, Antenna Group, Exciter Group, Radio Frequency Signal Processor Group, Performance Monitor Group, Radar Return Generator Group, Digital Data Group, and Radar Controller Group and any associated initial spares. Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Additionally, FY 2023 will fund ongoing program support costs for the Block 02 program. PARCS funding procures replacement components for unsupported, unobtainable, and unreliable system components. PARCS equipment is composed of custom-built components that became obsolete in the 1980s. Most spare parts for this system are no longer available and have no logistics tail. Without replacements there is a high risk of mission failure and/or unacceptable downtime for repair. To best ensure operational availability, replacement projects are performed in phases targeting the highest risk components of the subsystems. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>Non-program specific Congressional Directed Reduction to SPCMOD BPAC reduced PARCS by \$5.5M in FY 2022.</p> <p>The effort is funded in PE 1203912SF Sea Launched Ballistic Missile (SLBM) Detection and Warning System.</p> <p>Ionospheric Ground Sensors (IGS) (P-40a):</p> <p>IGS: FY 2023 funding will provide two required NEXION site feasibility surveys, as well as procurement, installation and fielding of two NEXION sensors to support space domain awareness (SDA), and associated activities to field state-of-the-art sensors that can improve coverage areas, efficiency, and characterization of ionospheric impacts to DoD and government agency communications. Funding will enable rapid response to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, prototyping, etc.</p> <p>The effort is funded in PE 1203940SF Space Situation Awareness Operations (SSAO).</p> <p>TAPOUT (P-40a):</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPCMOD / Space Mods
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203906SF	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>TAPOUT: FY 2023 funding will procurement of cameras, telescopes, enclosures, site-preparation, peripheral Information Technology (IT) and optical equipment.</p> <p>The effort is funded in PE 1203940SF Space Situation Awareness Operations.</p> <p>Solar Electro-Optical Network (SEON) (P-40a):</p> <p>SEON: FY 2023 funding will begin modernization of the RIMS Software Pedestal Control. Without this upgrade the new pedestals will not have an antenna control unit and the pedestals will not be usable. Funding enables rapid response to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, prototyping, etc.</p> <p>AN/UMQ-13 Meteorological Data Station (MARK IV-B) (P-40a):</p> <p>MARK IV-B: FY 2023 funding will provide software architecture maintenance which includes: maintenance of antenna, data feed, software, and hardware architecture vital to maintaining MARK IV-B's ability to communicate with newer, state-of-the-art, multinational satellites. Additionally, funding migrates MARK IV-B to the latest server configurations in order to maintain cybersecurity compliance. New ingest server updates are also scheduled, which will provide the warfighter forecasters (end-users) with updated and additional, relevant weather satellite sensor data. Funding also enables rapid response to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, prototyping, etc.</p> <p>The effort is funded in PE 1205111SF Weather Service.</p> <p>PE 1208736SF STARCOM Range and Aggressors:</p> <p>This effort is a new start in FY23. Funding in this program provides realistic and relevant threat replication, through Commercial off-the-shelf (COTS) GPS and SATCOM equipment. Current equipment is over 10 years old, failing, antiquated and therefore does not accurately replicate existing adversary threats due to system limitations. Procurement funding will provide a 166% increase SATCOM availability and 120% increase in GPC electronic attack assets used to replicate adversary counter-space operations in support of Joint training audiences. Funds provide recapitalization of five SATCOM equipment assets and eight GPS assets within FY23-25; FY26 and beyond provides a steady-state sustainment and replacement cycle for both SATCOM and GPS assets. Without funding, the space aggressors are at risk of significant degradation in their threat replication capabilities. Aging equipment will prevent the space aggressors from providing a realistic threat environment and degrade our ability to train joint and coalition partners in a contested, degraded, operationally-limited space environment.</p> <p>Efforts with funding starting in FY 2024 through FY 2027 are summarized on the P-40. Not all details of this funding are included in this P-40 exhibit set. A summary of the excepted details is as follows:</p> <ul style="list-style-type: none"> (a) FY 2024 Cost Delta: 96.463 million (b) FY 2025 Cost Delta: 71.955 million (c) FY 2026 Cost Delta: 48.303 million (d) FY 2027 Cost Delta: 41.489 million (e) FY Total Cost Delta: 422.573 million 		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force														Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10							P-1 Line Item Number / Title: SPCMOD / Space Mods							Aggregated Items Title: Defense Meteorological Satellite Program (SPACE)					

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware																				
Communication Engineering Change Proposal	A		-	-	-	1.105	1	1.105	-	-	0.000	-	-	-	-	-	-	-	-	-
Subtotal: Hardware			-	-	-	-	-	1.105	-	-	0.000	-	-	-	-	-	-	-	-	-
Total			-	-	-	-	-	1.105	-	-	0.000	-	-	-	-	-	-	-	-	-

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

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	13.887	0.081	5.579	0.000	5.579	0.000	0.000	0.000	-	-	19.547
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	13.887	0.081	5.579	0.000	5.579	0.000	0.000	0.000	-	-	19.547
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	13.887	0.081	5.579	0.000	5.579	0.000	0.000	0.000	-	-	19.547

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

NAVSTAR GPS provides highly accurate time and three dimensional position and velocity information to an unlimited number of users anywhere on or above the surface of the earth, in any weather. This system supplies highly accurate position, velocity, timing, and USNDS information to properly equipped air, land, sea, and space-based users worldwide. The GPS system consists of three segments: space, control, and user equipment. The OCS is part of the control segment and requires modifications to replace high failure rate parts and preclude system operational degradation. Without these mods, aging and obsolete equipment will excessively degrade, ultimately resulting in system failure. System failure or even partial system failure will cause a loss of operational availability and the transmission of inaccurate navigation data to worldwide users, resulting in potential loss of life and/or operational equipment, including multi-million dollar satellites. OCS is required to operate until the OCX transitions to operations, to include support for GPS III and fielding of MGUE.

FY 2023 funding procures GPS AEP, GIN, and LADO commercial equipment that has become obsolete/unsupportable or requires upgrades. Funding will procure equipment for the OCS ground sites including the MCS, AMCS, four GAs, six MSs, a contractor lab facility, and the TSTS. Modifications include required procurement, nonrecurring engineering, installation, testing, configuration management, security, quality assurance and technical documentation. Funding also procures cybersecurity enhancements to mitigate shortfalls in the legacy system. Funding sustains OCS until OCX transitions to operations, to include support for GPS III and fielding of MGUE. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.

This effort is funded in PE 1203165SF NAVSTAR GPS (Space and Control Segments).

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Models of Systems Affected: Blackhawk and IIR Flight Nav Systems	Modification Type: Capability Improvement	Related RDT&E PEs:
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Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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: Install Kit												
A Kits												
Recurring												
Install Kit:INSTALL KITS Group A (Active)	- / -	14 / 6.820	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 6.820
Subtotal: Recurring	- / -	- / 6.820	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.820
Subtotal: Install Kit	- / -	- / 6.820	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.820

Modification Item 2 of 3: Install Kit Group B												
A Kits												
Recurring												
Install Kit Group B:GROUP B: TOTAL EQUIPMENT	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.000
Subtotal: Recurring	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.000
B Kits												
Recurring												
Install Kit Group B:TOTAL: GROUP A	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.000
Subtotal: Recurring	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.000
Subtotal: Install Kit Group B	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 0.000

Modification Item 3 of 3: Install Kits: INSTALL KITS Group A (Active)												
B Kits												
Recurring												
Install Kits: INSTALL KITS Group A (Active):EQUIPMENT Group B (Active)	- / -	14 / 1.413	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 1.413
Subtotal: Recurring	- / -	- / 1.413	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.413
Subtotal: Install Kits: INSTALL KITS Group A (Active)	- / -	- / 1.413	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.413
Subtotal: Procurement, All Modification Items	- / -	- / 8.233	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.233

Support (All Modification Items)												
OTHER GOVT	- / -	- / 0.640	- / -	- / 15.579	- / -	- / 15.579	- / -	- / -	- / -	- / -	- / -	- / 16.219
Data	- / -	- / 2.624	- / 0.050	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 2.674
SUPPORT-EQUIP	- / -	- / 0.370	- / 0.031	- / 0.000	- / -	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.401

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Models of Systems Affected: Blackhawk and IIR Flight Nav Systems	Modification Type: Capability Improvement	Related RDT&E PEs:
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Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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: Support</i>	- / -	- / 3.634	- / 0.081	- / 5.579	- / -	- / 5.579	- / -	- / -	- / -	- / -	- / -	- / 9.294
Installation												
<i>Modification Item 1 of 3: Install Kit</i>	- / -	14 / 2.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.020
<i>Subtotal: Installation</i>	- / -	14 / 2.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.020
Total												
Total Cost (Procurement + Support + Installation)	0.000	13.887	0.081	5.579	0.000	5.579	0.000	0.000	0.000	-	-	19.547

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Modification Item 1 of 3: Install Kit

Manufacturer Information

Manufacturer Name: Unknown	Manufacturer Location: Unknown
Administrative Leadtime (in Months): 0	Production Leadtime (in Months): 0

Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates	Dec 2020						
Delivery Dates	Dec 2020						

Installation Information

Method of Implementation: Contractor Facility

Installation Cost	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 2021	- / -	14 / 2.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.020
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2026	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2027	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	14 / 2.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 2.020

Installation Schedule

	PYS	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				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	0	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14	
Out	0	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force						Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: SPCMOD / Space Mods			Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE	
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:		
Modification Item 2 of 3: Install Kit Group B							
Manufacturer Information							
Manufacturer Name: N/A				Manufacturer Location: N/A			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force						Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: SPCMOD / Space Mods			Modification Number / Title: 1 / NAVSTAR GPS-OCS COTS UPGRADE	
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:		
Modification Item 3 of 3: Install Kits: INSTALL KITS Group A (Active)							
Manufacturer Information							
Manufacturer Name: Unknown				Manufacturer Location: Unknown			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 0			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 0		

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** SPCMOD / Space Mods **Aggregated Items Title:** Shared Early Warning System (SEWS)

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
SEWS																				
Modification	A		-	-	-	0.361	1	0.361	0.363	1	0.363	0.384	1	0.384	-	-	-	0.384	1	0.384
Subtotal: SEWS			-	-	-	-	-	0.361	-	-	0.363	-	-	0.384	-	-	-	-	-	0.384
Total			-	-	-	-	-	0.361	-	-	0.363	-	-	0.384	-	-	-	-	-	0.384

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

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Aggregated Items Title: Ballistic Missile Defense Radars
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Block 00																				
Transmitter Section	A		-	-	-	24.185	1	24.185	30.979	1	30.979	18.116	1	18.116	-	-	-	18.116	1	18.116
Subtotal: Block 00			-	-	-	-	-	24.185	-	-	30.979	-	-	18.116	-	-	-	-	-	18.116
Total			-	-	-	-	-	24.185	-	-	30.979	-	-	18.116	-	-	-	-	-	18.116

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

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Aggregated Items Title: Cheyenne Mountain Complex
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
NCMC																				
Hardware	A		-	-	-	-	-	-	-	-	-	0.104	1	0.104	-	-	-	0.104	1	0.104
Subtotal: NCMC			-	-	-	-	-	-	-	-	-	-	-	0.104	-	-	-	-	-	0.104
Total			-	-	-	-	-	-	-	-	-	-	-	0.104	-	-	-	-	-	0.104

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

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Modification Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Aggregated Modification Items Title: Cheyenne Mountain Complex
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Item Number / Title	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
NCMCB4 / NORAD Cheyenne Mountain Complex Block 04			-	-	-	-	-	2.115	-	-	0.200	-	-	-	-	-	-	-	-	-
NCMCB5 / Block 05			-	-	-	-	-	-	-	-	1.922	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	2.115	-	-	2.122	-	-	0.000	-	-	0.000	-	-	0.000

Item Number / Title	ID CD	MDAP/MAIS Code	FY 2024			FY 2025			FY 2026			FY 2027			To Complete			Total Cost		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
NCMCB4 / NORAD Cheyenne Mountain Complex Block 04			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.315
NCMCB5 / Block 05			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.922
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	4.237

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

Modification Information:

Item Number / Title	Models of Systems Affected	Modification Type
NCMCB4 / NORAD Cheyenne Mountain Complex Block 04	NORADCheyenneMountainComplex	Reliability & Maintainability
NCMCB5 / Block 05	NORADCheyenneMountainComplex	Reliability & Maintainability

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Modification Items: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: SPCMOD / Space Mods Aggregated Modification Items Title: Ballistic Missile Early Warning

Item Number / Title	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
BMEWS-1 / BPP Block 02			-	-	-	-	-	4.439	-	-	-	-	-	-	-	-	-	-	-	
BMEWS-3 / DPSP			-	-	-	-	-	4.000	-	-	-	-	-	-	-	-	-	-	-	
Total			-	-	0.000	-	-	8.439	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Item Number / Title	ID CD	MDAP/MAIS Code	FY 2024			FY 2025			FY 2026			FY 2027			To Complete			Total Cost		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
BMEWS-1 / BPP Block 02			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.439
BMEWS-3 / DPSP			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.000
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	8.439

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

Modification Information:

Item Number / Title	Models of Systems Affected	Modification Type
BMEWS-1 / BPP Block 02	NA	Reliability & Maintainability
BMEWS-3 / DPSP	TBD	Reliability & Maintainability

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Aggregated Items Title: Ballistic Missile Early Warning
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
BPP Block 00 Update																				
Subarray Power	A		-	-	-	23.744	1	23.744	18.881	1	18.881	14.138	1	14.138	-	-	-	14.138	1	14.138
Subtotal: BPP Block 00 Update			-	-	-	-	-	23.744	-	-	18.881	-	-	14.138	-	-	-	-	-	14.138
BPP Block 03 Update																				
Receive/Transmit	A		-	-	-	0.912	1	0.912	0.950	1	0.950	14.981	1	14.981	-	-	-	14.981	1	14.981
Subtotal: BPP Block 03 Update			-	-	-	-	-	0.912	-	-	0.950	-	-	14.981	-	-	-	-	-	14.981
Total			-	-	-	-	-	24.656	-	-	19.831	-	-	29.119	-	-	-	-	-	29.119

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

UNCLASSIFIED

Exhibit P-40a, Budget Item Justification For Aggregated Modification Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** SPCMOD / Space Mods **Aggregated Modification Items Title:** Submarine-Launched Ballistic Missile

Item Number / Title	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
PARCSB1 / PARCS Block 01			-	-	-	-	-	0.798	-	-	-	-	-	-	-	-	-	-	-	
Total			-	-	0.000	-	-	0.798	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

Item Number / Title	ID CD	MDAP/MAIS Code	FY 2024			FY 2025			FY 2026			FY 2027			To Complete			Total Cost		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
PARCSB1 / PARCS Block 01			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.798
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.798

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

Modification Information:

Item Number / Title	Models of Systems Affected	Modification Type
PARCSB1 / PARCS Block 01	NA	Reliability & Maintainability

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPCMOD / Space Mods	Modification Number / Title: 1 / PARCS Block 02
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ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	0.500	2.949	5.495	0.000	5.495	10.443	9.985	8.962	9.141	-	47.475
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	0.500	2.949	5.495	0.000	5.495	10.443	9.985	8.962	9.141	-	47.475
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	0.500	2.949	5.495	0.000	5.495	10.443	9.985	8.962	9.141	-	47.475

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

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Perimeter Acquisition Radar Attack Characterization System (PARCS) Program Office plans for and procures replacement components for otherwise unsupportable, unobtainable, and unreliable system components. PARCS equipment is composed of custom built components that became obsolete in the 1980s. Most spare parts for this system are no longer available and have no logistics tail. Without replacements, there is a high risk of mission failure and/or unacceptable downtime for repair. To best ensure operational availability, replacement projects are performed in phases targeting the highest risk components of the subsystems.

This program was previously funded out of Air Force Appropriation 3021 Space Procurement, PEC: 1203912F, BPAC: 23SMOD.

FY 2023 will fund Block 02 by continuing modifications to the PARCS system for the replacement of unsupportable and unreliable components to include, but not limited to, the PARCS Mission Data Processor, Radar Transmitter, Antenna Group, Exciter Group, Radio Frequency Signal Processor Group, Performance Monitor Group, Radar Return Generator Group, Digital Data Group, and Radar Controller Group and any associated initial spares. Due to the limited spares demand rates, and indefinite system lifespan, life-of-type buys may be required to support this weapon system. Additionally, FY 2023 will fund ongoing program support costs for the Block 02 program. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to, program office support, studies, technical analysis, etc.

Non-program specific Congressional Directed Reduction to SPCMOD BPAC reduced PARCS by \$5.5M in FY 2022.

Milestone/Development Status

N/A

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2023 Air Force											Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: SPCMOD / Space Mods					Modification Number / Title: 1 / PARCS Block 02			
ID Code (A=Service Ready, B=Not Service Ready) : A							MDAP/MAIS Code:					
Models of Systems Affected: NA			Modification Type: Reliability & Maintainability				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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: COMMON: Install Kits (2)</i>												
A Kits												
Recurring												
COMMON: Install Kits:INSTALL KITS Group A (Active)												
	- / -	- / -	- / 0.100	- / 0.100	- / -	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / -	- / 0.600
<i>Subtotal: Recurring</i>												
	- / -	- / -	- / 0.100	- / 0.100	- / -	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / -	- / 0.600
<i>Subtotal: COMMON: Install Kits (2)</i>												
	- / -	- / -	- / 0.100	- / 0.100	- / -	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / 0.100	- / -	- / 0.600
<i>Modification Item 2 of 2: PARCS: EQUIPMENT (2)</i>												
B Kits												
Recurring												
PARCS: EQUIPMENT:EQUIPMENT Group B (Active)												
	- / -	- / -	1 / 1.849	1 / 2.895	- / -	1 / 2.895	1 / 7.843	1 / 7.385	1 / 6.362	1 / 6.541	- / -	6 / 32.875
<i>Subtotal: Recurring</i>												
	- / -	- / -	- / 1.849	- / 2.895	- / -	- / 2.895	- / 7.843	- / 7.385	- / 6.362	- / 6.541	- / -	- / 32.875
<i>Subtotal: PARCS: EQUIPMENT (2)</i>												
	- / -	- / -	- / 1.849	- / 2.895	- / -	- / 2.895	- / 7.843	- / 7.385	- / 6.362	- / 6.541	- / -	- / 32.875
<i>Subtotal: Procurement, All Modification Items</i>												
	- / -	- / -	- / 1.949	- / 2.995	- / -	- / 2.995	- / 7.943	- / 7.485	- / 6.462	- / 6.641	- / -	- / 33.475
Support (All Modification Items)												
A&AS												
	- / -	- / 0.500	- / 1.000	- / 2.500	- / -	- / 2.500	- / 2.500	- / 2.500	- / 2.500	- / 2.500	- / -	- / 14.000
<i>Subtotal: Support</i>												
	- / -	- / 0.500	- / 1.000	- / 2.500	- / -	- / 2.500	- / 2.500	- / 2.500	- / 2.500	- / 2.500	- / -	- / 14.000
Installation												
<i>Subtotal: Installation</i>												
	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total												
Total Cost (Procurement + Support + Installation)												
	-	0.500	2.949	5.495	0.000	5.495	10.443	9.985	8.962	9.141	-	47.475

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Exhibit P-3a, Individual Modification: PB 2023 Air Force						Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: SPCMOD / Space Mods			Modification Number / Title: 1 / PARCS Block 02	
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:		
Modification Item 1 of 2: COMMON: Install Kits (2)							
Manufacturer Information							
Manufacturer Name: N/A				Manufacturer Location: N/A			
Administrative Leadtime (in Months):				Production Leadtime (in Months):			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates							
Delivery Dates							
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 0		

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Exhibit P-3a, Individual Modification: PB 2023 Air Force						Date: April 2021	
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: SPCMOD / Space Mods			Modification Number / Title: 1 / PARCS Block 02	
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:		
Modification Item 2 of 2: PARCS: EQUIPMENT (2)							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months): 3				Production Leadtime (in Months): 15			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates		Mar 2022	Mar 2023	Mar 2024	Mar 2025	Mar 2026	Mar 2027
Delivery Dates		Jun 2023	Jun 2024	Jun 2025	Jun 2026	Jun 2027	Jun 2028
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 6		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** SPCMOD / Space Mods **Aggregated Items Title:** Space Situational Awareness Operations

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware-Hardware End Item Cost																				
IGS	A		-	-	-	-	-	-	-	-	-	0.421	2	0.842	-	-	-	0.421	2	0.842
SEON	A		-	-	-	-	-	-	-	-	-	0.599	1	0.599	-	-	-	0.599	1	0.599
TAPOUT	A		-	-	-	-	-	-	-	-	-	1.035	8	8.284	-	-	-	1.036	8	8.284
Subtotal: Hardware-Hardware End Item Cost			-	-	-	-	-	-	-	-	-	-	-	9.725	-	-	-	-	-	9.725
Support-Support End Item Cost																				
INSTALLATION-IGS	A		-	-	-	-	-	-	-	-	-	2.081	2	4.163	-	-	-	2.082	2	4.163
Subtotal: Support-Support End Item Cost			-	-	-	-	-	-	-	-	-	-	-	4.163	-	-	-	-	-	4.163
Total			-	-	-	-	-	-	-	-	-	-	-	13.888	-	-	-	-	-	13.888

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

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** SPCMOD / Space Mods **Aggregated Items Title:** Weather Service

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware-Hardware End Item Cost																				
MARK IV-B	A		-	-	-	-	-	-	-	-	-	1.272	1	1.272	-	-	-	1.272	1	1.272
Subtotal: Hardware-Hardware End Item Cost			-	-	-	-	-	-	-	-	-	-	-	1.272	-	-	-	-	-	1.272
Total			-	-	-	-	-	-	-	-	-	-	-	1.272	-	-	-	-	-	1.272

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

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity:
3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs

P-1 Line Item Number / Title:
SPRNGE / Spacelift Range System Space

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** 1203182SF **Other Related Program Elements:** 1203182SF

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	90.492	93.774	71.712	-	71.712	115.429	109.487	109.267	112.116	-	702.277
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	90.492	93.774	71.712	-	71.712	115.429	109.487	109.267	112.116	-	702.277
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	90.492	93.774	71.712	-	71.712	115.429	109.487	109.267	112.116	-	702.277

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

Description:

The Spacelift Range System (SLRS), also known as the Launch and Test Range System (LTRS), provides public safety and assured access to space. LTRS operates at the Eastern Range (ER) at Patrick SFB/Cape Canaveral SFS, FL and the Western Range (WR) at Vandenberg SFB, CA. LTRS provides tracking, telemetry, communications, flight safety, and other capabilities to support launch of national security space (NSS), civil and commercial space payloads, Intercontinental and Sea Launched ballistic missile and missile defense evaluations, and aeronautical and guided weapon tests. LTRS ensures ability to meet the national launch requirement, safely support the launch cadence of ER/EW launch requirement holders, and provide assured access to space for the nation. The ER and WR are designated as Department of Defense Major Range and Test Facility Bases (MRTFB). LTRS is comprised of twelve subsystems that together provide this capability to the ranges. The Range Safety and Command Destruct subsystems provide the capability to destroy an errant rocket, if necessary to protect public safety. These subsystems rely on the Telemetry, Radar, and Optics subsystems to provide tracking data. The Weather and Surveillance subsystems allow range operators and customers to determine if conditions are safe for launch. The Communications, Data Handling, and Timing & Sequencing subsystems ensure critical data is expeditiously routed from remote sensors (e.g., radars, optics) to range operators and customers. Finally, the Planning and Scheduling subsystem ensures all assets are available when needed for a launch or test operation. The Space Force prioritizes procurement funds to ensure aging range equipment is modernized to support mission requirements. Sustainment trends are continuously analyzed and assessed across all twelve subsystems and procurement funds are used to modernize the most critical mission equipment and procure replacement components.

- 1) LTRS Replenishment Spares Procurement: Provides peculiar and common support material, required re-procurement data, and interim supply support management.
- 2) LTRS Support Services: FFRDC mission assurance activities ensure all twelve subsystems are compatible with mission rules and do not pose a risk to safe and cost-effective satellite launches. Funds are also used for Systems Engineering and Integration (SE&I) to ensure baseline documentation and modernization activities remain synchronized with the sustainment baseline.
- 3) LTRS Commodities Procurement: LTRS commodities procurement will meet Space Force Commander's Range of the Future (ROTF) direction to: (1) ensure LTRS meets increasing launch capacity demand on the ER and WR; and (2) provide user support to launch and test requirement holders. The Commander's intent is that LTRS capability will not constrain the national space launch cadence. The Space Force will use various contract vehicles to procure, configure, install and integrate ROTF system architecture modifications to support the requirement for 80 launches per year and achieve vehicle performance assessment rates of up to 30 megabytes (Mb) per second. These modifications will include advanced digital data receive, transport and processing capability and modernized telemetry formats leveraging dispersed and disaggregated deployment concepts.
- 4) Range Communications Facility (RCF): Relocate communications capabilities from the Eastern Range XY building to a new RCF, resolving building degradation, code non-compliance, and high risk off-loading. The Space Force will either move existing equipment or procure new COTS equipment if necessary, to meet system requirements and minimize impacts to scheduled launches.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203182SF	Other Related Program Elements: 1203182SF
Line Item MDAP/MAIS Code: N/A		

5) Range Command Destruct Modernization (RCDM): Modernizes the Eastern Range Command Destruct Systems. The Range Command Destruct modernization will provide the capability to use a new secure Command Destruct code, the Enhanced Flight Termination System (EFTS), mandated by the NSA for cyber security on the Eastern Range. The Eastern Range Command Destruct system will replace a sustainment "worst actor" that has been the cause of an expensive launch scrub as well as several near scrubs.

6) Modernization of Eastern Range Network (MEN): Upgrades the communications subsystem on the Eastern Range from outdated Asynchronous Transfer Mode (ATM) technology to Internet Protocol (IP) version 4/6 (IPv4/IPv6). MEN resolves obsolescence issues facing the program, addresses high-priority sustainment issues, and provides improved cyber security for range operations. The contract was awarded as a small business set-aside.

7) Western Range Modernization of Network (WMN): Upgrades the communications subsystem on Western Range from Asynchronous Transfer Mode (ATM) technology to an IPv6 based/IPv4 compatible network, resolving obsolescence issues, numerous high-priority sustainment issues, and providing improved cyber security for range operations. The WMN contract was awarded as a small business set aside.

8) Digital Edge Modernization (DEM): Transforms Eastern Range (ER) and Western Range (WR) sensors and systems providing data, video, and communications information required to conduct launch operations. It drives toward data-driven Range operations by digitizing systems across the 12 Launch and Test Range System (LTRS) subsystems driving state-of-the-practice native internet protocol data receipt and processing. Digital Edge Modernization will adapt Ranges to accommodate modern launch service provider digital operational concepts increasing Range launch capacity and cadence and reduce Range turn-time between activities.

ROTF Projects will enable agile and resilient LTRS operations following full AFSS implementation. LTRS must support non-AFSS equipped Major Range and Test Facility Base (MRTFB) activities through 2030. This requires budgeted LTRS sustainment through Range of the Future (ROTF) Architecture deployment in 2028, prior to implemented Spacelift Range Reductions.

Space acquisition must respond with speed and agility to emerging adversary threats. Space Systems Command (SSC) has transformed the organization and implementation of space acquisition to an enterprise approach, to increase innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified/classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanisms to deliver capability sooner, SSC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop new or repurpose existing capabilities.

Funding for this exhibit is contained in PE 1203182SF.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force	Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs	P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space

ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203182SF	Other Related Program Elements: 1203182SF
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 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	Space Lift Range System Modernization		A		- / -	- / 76.034	- / 83.316	- / 61.567	- / -	- / 61.567
P-40a	Space Lift Range System Modifications				- / 0.000	- / 5.749	- / 4.480	- / 1.745	- / 0.000	- / 1.745
P-3a	1 / Range Communications Facility (RCF) (Reliability & Maintainability)		B		- / 0.000	- / 8.709	- / 5.978	- / 8.400	- / 0.000	- / 8.400
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 90.492	- / 93.774	- / 71.712	- / -	- / 71.712

Exhibits Schedule					FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Space Lift Range System Modernization		A		- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Space Lift Range System Modifications				- / 0.023	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 11.997
P-3a	1 / Range Communications Facility (RCF) (Reliability & Maintainability)		B		- / 8.100	- / 0.000	- / 0.000	- / -	- / -	- / 31.187
P-40	Total Gross/Weapon System Cost				- / 115.429	- / 109.487	- / 109.267	- / 112.116	- / -	- / 702.277

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

Justification:
 LTRS Commodities Procurement (P-5): FY 2023 funds will accelerate system integration for 2023 ROTF capital equipment into the LTRS baseline delivering on launch capacity and data collection requirements and continue out-year ROTF equipment modernization projects, including the WR Weather Surveillance Radar Replacement and Vandenberg Atmospheric Detection Electrified Range and continue ER Telemetry Antenna Controller (TAC) Replacement.
 LTRS Interim Supply Support (P-5): FY 2023 funds will continue to provide LTRS supply support to include spares, spares management support, and management support in preparation of delivering ROTF 2023 architecture.
 LTRS Support Services (P-5): FY 2023 funds will continue FFRDC mission assurance and procurement and research and development to ensure LTRS is technically compatible with launch mission assurance and mission safety rules. Funds will continue SE&I and program management support ensuring LTRS system engineering baseline currency throughout ROTF modernization and provide program acquisition operations activities.
 WMN (P-40a): FY 2023 funds will support the transition of WMN from development to operations and sustainment. It will provide modernized communications support for both ROTF Operations as well as provide enhanced legacy Flight Termination System (FTS) mission support. The enhanced FTS support will provide capability to securely receive/distribute/archive classified information per MDA and Global Strike security classification guide requirements for WR MRTFB launch operations.
 RCDM (P-40a): No FY 2023 funding requested.
 RCF (P-3a): FY 2023 funds will complete Phase 3B to include the relocation of all remaining non-mission systems.

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 01: Space Procurement, SF / BSA 10: Space Programs		P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 1203182SF	Other Related Program Elements: 1203182SF
Line Item MDAP/MAIS Code: N/A		
<p>Digital Edge Modernization (DEM): FY 2023 funds will procure and integrate Next Generation ROSA Radar (19.134) transmitter/antenna assembly on Kennedy Space Center (KSC) and initiate Radar 0.134 ROSA control segment planning.</p> <p>Additionally, FY 2023 funding will allow the program to rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities include, but are not limited to, program office support, studies, technical analysis, etc.</p> <p>Efforts with funding starting in FY 2024 through FY 2027 are summarized on the P-40. Not all details of this funding are included in this P-40 exhibit set. A summary of the excepted details is as follows:</p> <ul style="list-style-type: none"> (a) FY 2024 Cost Delta: 107.306 million (b) FY 2025 Cost Delta: 109.487 million (c) FY 2026 Cost Delta: 109.267 million (d) FY 2027 Cost Delta: 112.116 million (e) FY Total Cost Delta: 659.093 million 		

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Exhibit P-5, Cost Analysis: PB 2023 Air Force						Date: April 2021			
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10				P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space			Item Number / Title [DODIC]: Space Lift Range System Modernization		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:			
Resource Summary				Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Procurement Quantity (Units in Each)				-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)				-	76.034	83.316	61.567	-	61.567
Less PY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)				-	76.034	83.316	61.567	-	61.567
Plus CY Advance Procurement (\$ in Millions)				-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)				-	76.034	83.316	61.567	-	61.567
<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 Millions)				-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - Spacelift Range System Space Cost																		
Non Recurring Cost																		
Commodities Procurement	-	-	-	-	-	36.697	-	-	46.133	-	-	23.742	-	-	-	-	-	23.742
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	36.697	-	-	46.133	-	-	23.742	-	-	-	-	-	23.742
<i>Subtotal: Hardware - Spacelift Range System Space Cost</i>	-	-	-	-	-	36.697	-	-	46.133	-	-	23.742	-	-	-	-	-	23.742
Logistics - Spacelift Range System Space Cost																		
Recurring Cost																		
Interim Supply Support Material (Parts/Supplies)	-	-	-	-	-	6.631	-	-	5.076	-	-	6.898	-	-	-	-	-	6.898
Interim Supply Support Services/Labor	-	-	-	-	-	1.659	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
Technical Mission Analysis	-	-	-	-	-	4.400	-	-	4.756	-	-	4.342	-	-	-	-	-	4.342
Enterprise Systems Engineering and Integration	-	-	-	-	-	19.261	-	-	15.960	-	-	15.800	-	-	-	-	-	15.800
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	31.951	-	-	25.792	-	-	27.040	-	-	-	-	-	27.040
<i>Subtotal: Logistics - Spacelift Range System Space Cost</i>	-	-	-	-	-	31.951	-	-	25.792	-	-	27.040	-	-	-	-	-	27.040
Support - Spacelift Range System Space Cost																		
FFRDC	-	-	-	-	-	0.000	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000

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Exhibit P-5, Cost Analysis: PB 2023 Air Force												Date: April 2021					
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10						P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space						Item Number / Title [DODIC]: Space Lift Range System Modernization					
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 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Advisory and Assistance Services (A&AS)	-	-	-	-	-	4.836	-	-	6.471	-	-	6.600	-	-	-	-	-	6.600
Other Support	-	-	-	-	-	2.550	-	-	4.920	-	-	4.185	-	-	-	-	-	4.185
<i>Subtotal: Support - Spacelift Range System Space Cost</i>	-	-	-	-	-	7.386	-	-	11.391	-	-	10.785	-	-	-	-	-	10.785
Gross/Weapon System Cost	-	-	-	-	-	76.034	-	-	83.316	-	-	61.567	-	-	-	-	-	61.567

Remarks:

- Unit quantities and costs vary widely for multiple types and configurations of equipment being procured under modernization and sustainment project cost elements each fiscal year.

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Exhibit P-40a, Budget Item Justification For Aggregated Modification Items: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 **P-1 Line Item Number / Title:** SPRNGE / Spacelift Range System Space **Aggregated Modification Items Title:** Space Lift Range System Modifications

Item Number / Title	ID CD	MDAP/MAIS Code	Prior Years			FY 2021			FY 2022			FY 2023 Base			FY 2023 OCO			FY 2023 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
02-WMN / Western Range Modernization of Network (WMN)			-	-	-	-	-	1.981	-	-	3.409	-	-	1.745	-	-	-	-	-	1.745
03-RCDM / Range Command Destruct Modernization (RCDM)			-	-	-	-	-	3.768	-	-	1.071	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	5.749	-	-	4.480	-	-	1.745	-	-	0.000	-	-	1.745

Item Number / Title	ID CD	MDAP/MAIS Code	FY 2024			FY 2025			FY 2026			FY 2027			To Complete			Total Cost		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
02-WMN / Western Range Modernization of Network (WMN)			-	-	0.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.158
03-RCDM / Range Command Destruct Modernization (RCDM)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.839
Total			-	-	0.023	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	11.997

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

Modification Information:

Item Number / Title	Models of Systems Affected	Modification Type
02-WMN / Western Range Modernization of Network (WMN)	WMN	Capability Improvement
03-RCDM / Range Command Destruct Modernization (RCDM)	RCDM	Capability Improvement

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Exhibit P-3a, Individual Modification: PB 2023 Air Force		Date: April 2021
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10	P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space	Modification Number / Title: 1 / Range Communications Facility (RCF)

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

Resource Summary	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	8.709	5.978	8.400	0.000	8.400	8.100	0.000	0.000	-	-	31.187
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	8.709	5.978	8.400	0.000	8.400	8.100	0.000	0.000	-	-	31.187
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	8.709	5.978	8.400	0.000	8.400	8.100	0.000	0.000	-	-	31.187

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The two separate actions for the RCF Program in FY 2023 will be 1) Phase 3B/45SCS and 2) Phase 3B/45CES.

FY 2023 Funds will be applied to RCF Phase 3B. Phase 3B consists of relocating the existing NON-Mission admin/communication systems from the X/Y to the RCF building. Phase 3B will be managed by the 45SCS and the 45CES and contracted out to through the Eastern Western Operational Communications Support (EWOCS) contract. This will be accomplished by two separate purchase orders (one to the 45SCS and one to the 45CES). The Public Address (PA)/Cape Aural Warning System (AWS) is included with the 45SCS scope of work. Agreements with the 45SCS and the 45CES has already been drafted, finalized, and signed.

Milestone/Development Status

Post Milestone C - Production and Development Phase

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Exhibit P-3a, Individual Modification: PB 2023 Air Force Date: April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10 P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space Modification Number / Title: 1 / Range Communications Facility (RCF)

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

Models of Systems Affected: RCF Modification Type: Reliability & Maintainability Related RDT&E PEs: 1203182SF

Financial Plan	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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> Range Commincations Facility (RCF)												
B Kits												
Recurring												
Range Commincations Facility (RCF):EQUIPMENT Group B (Active)	- / -	1 / 8.709	1 / 5.978	1 / 8.400	- / -	1 / 8.400	1 / 8.100	- / -	- / -	- / -	- / -	4 / 31.187
<i>Subtotal: Recurring</i>	- / -	- / 8.709	- / 5.978	- / 8.400	- / -	- / 8.400	- / 8.100	- / -	- / -	- / -	- / -	- / 31.187
<i>Subtotal: Range Commincations Facility (RCF)</i>	- / -	- / 8.709	- / 5.978	- / 8.400	- / -	- / 8.400	- / 8.100	- / -	- / -	- / -	- / -	- / 31.187
<i>Subtotal: Procurement, All Modification Items</i>	- / -	- / 8.709	- / 5.978	- / 8.400	- / -	- / 8.400	- / 8.100	- / -	- / -	- / -	- / -	- / 31.187
Installation												
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total												
Total Cost (Procurement + Support + Installation)	0.000	8.709	5.978	8.400	0.000	8.400	8.100	0.000	0.000	-	-	31.187

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Exhibit P-3a, Individual Modification: PB 2023 Air Force					Date: April 2021		
Appropriation / Budget Activity / Budget Sub Activity: 3022F / 01 / 10			P-1 Line Item Number / Title: SPRNGE / Spacelift Range System Space			Modification Number / Title: 1 / Range Communications Facility (RCF)	
ID Code (A=Service Ready, B=Not Service Ready) : B				MDAP/MAIS Code:			
Modification Item 1 of 1: Range Commincations Facility (RCF)							
Manufacturer Information							
Manufacturer Name: Range Generation Next LLC				Manufacturer Location: Sterling, VA			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 0			
Dates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Contract Dates	Mar 2021	Apr 2022	Apr 2023	Apr 2024			
Delivery Dates	Mar 2021	Apr 2022	Apr 2023	Apr 2024			
Installation Information							
Method of Implementation (Organic): Org/Intermediate					Installation Quantity: 4		

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Exhibit P-40, Budget Line Item Justification: PB 2023 Air Force **Date:** April 2021

Appropriation / Budget Activity / Budget Sub Activity: 3022F: Procurement, Space Force / BA 02: Spares / BSA 20: Spares **P-1 Line Item Number / Title:** SSPARE / Spares and Repair Parts

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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	1.272	1.282	1.352	-	1.352	0.900	0.914	0.932	0.957	0.000	7.609
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	1.272	1.282	1.352	-	1.352	0.900	0.914	0.932	0.957	0.000	7.609
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	1.272	1.282	1.352	-	1.352	0.900	0.914	0.932	0.957	0.000	7.609

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

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

Description:

Initial Spares consist of reparable components, assemblies, sub-assemblies, and consumable items required as initial stock (including readiness spares package requirements) in support of space acquisition programs. Requirements are determined by applying established factors against the acquisition cost of the end items. The factors are based on historical data of similar equipment, employment/deployment concepts, production schedules, and other related information.

This line contains funding for the following programs:
 Information Systems Security Program
 NAVSTAR Global Positioning System (Control Segment)

Justification:

Justification:
 The FY 2023 budget supports initial spares for the following programs: Information Systems Security Program, NAVSTAR Global Positioning System (GPS) Space and Control Segments.

PE 1203140SF Information Systems Security Programs: FY 2023 funding (\$0.889M) is required to supply crypto devices for space and ground nodes, used by all Services/Agencies, to meet an NSA cybersecurity mandates.

PE 1203165SF NAVSTAR GPS: FY 2023 funding (\$0.463M) provides initial operational equipment spares for GPS ground sites and laboratories, replacing equipment that is primarily obsolete and requires maintainability upgrades. Projects include upgrades of the GPS Information Network (GIN), deployed in 2012, and the technical refresh of the GPS Ground Antenna Infrastructure, deployed in 2009. Both systems are beyond design life and require reconstitution. Spares are needed to support the systems through their remaining life cycles. Both systems will continue to be required for operations into the GPS Next Generation Operational Control System (OCX) era.

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