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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F: <i>Research, Development, Test &amp; Evaluation, Space Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	0.000	460.942	402.532	359.720	0.000	359.720	274.887	82.499	22.871	6.620	0.000	1,610.071
67A021: OCX	0.000	406.805	346.343	265.341	0.000	265.341	176.824	19.208	0.000	0.000	0.000	1,214.521
67A023: OCX Block 3F	0.000	0.000	0.000	94.379	0.000	94.379	98.063	63.291	22.871	6.620	0.000	285.224
67A025: GPS Enterprise Integrator	0.000	54.137	56.189	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	110.326

**Note**

In FY 2023, PE 1206423SF, Global Positioning System III - Operational Control Segment, Project 67A021, OCX Block 3F efforts were transferred to PE 1206423SF, Global Positioning System III - Operational Control Segment, Project 67A023, Space Programs in order to increase program visibility.

In FY 2023, PE 1206423SF, Global Positioning System III - Operational Control Segment, Project 67A025, GPS Enterprise Integrator efforts were transferred PE 1203269SF, Global Positioning System IIIIF, Project 653170, Space Programs in order to continue enterprise integration activities to support GPS IIIIF Space, Ground and User Segment.

**A. Mission Description and Budget Item Justification**

The Global Positioning System (GPS) is a space based Positioning, Navigation and Timing (PNT) distribution system which operates through all weather. GPS supports both civil and military users in air, space, sea and land operations. GPS is a satellite-based radio navigation system that serves military and civil users worldwide. GPS users process satellite signals to determine accurate position, velocity and time. GPS must comply with Title 10 United States Code (USC) Sec 2281 which requires that the Secretary of Defense (SECDEF) 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.

Program Element (PE) 1206423SF funds Research, Development, Test and Evaluation (RDT&E) for the GPS Next Generation Operational Control System (OCX), which includes OCX Blocks 0, 1, and 2, the upgrade to OCX called OCX Block 3F, which incorporates Regional Military Protection (RMP) and command and control functionality for GPS III Follow-on (GPS IIIIF) satellites, as well as GPS Enterprise Integrator (EI).

OCX acquisition was established to 1) provide command and control of legacy and GPS III satellites, 2) incorporate situational awareness to support Navigation Warfare (NAVWAR) and signal monitoring, 3) enable mission capability upgrades to support a warfighter effects-based approach to operations, and 4) integrate Department of Defense (DoD) information assurance and cybersecurity controls and capabilities. OCX Block 3F will upgrade OCX with new capabilities to synchronizes with GPS IIIIF Space Segment capabilities. GPS EI is responsible for architecture and system definition (the analysis and definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents) as well as for the planning, execution, and fielding of the GPS Enterprise.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F: <i>Research, Development, Test &amp; Evaluation, Space Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	
<p>OCX and OCX Block 3F funds support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, modernization initiatives, systems engineering, system development, resolving obsolescence issues, test and evaluation efforts, pre-operational support activities, and interim contractor support. These activities support upgrades and product improvements for military and civil applications necessary to enable efforts to protect the United States Military and Allies' use of GPS. Additionally, funds ensure OCX and OCX Block 3F efforts meet Joint Requirements Oversight Council (JROC) approved required capabilities.</p> <p>OCX Block 3F is required to launch and operationally command and control GPS IIF space vehicles. OCX Block 3F will upgrade OCX with new capabilities to synchronize with GPS IIF Space Segment and Military GPS User Equipment (MGUE) Increment 2 capabilities. This includes master control station development, GPS system simulator modification, launch and mission planning development, training simulators, integrated logistics support products, test resources, systems engineering required to meet the Government's obligations to the international, military and civil communities, and system requirements verification. OCX Block 3F will maintain backward compatibility to support the legacy constellation develop solutions necessary to command, control and monitor GPS IIF, to include integration of RMP high power regional M-code signals, rapid warfighter effects and support to GPS auxiliary payloads.</p> <p>The GPS Enterprise consists of Space, Ground Control, and User Equipment Segments and Nuclear Detonation (NUDET) Detection System (NDS). The Government is responsible for the integration of the GPS Segments such that they provide worldwide GPS capability to support the warfighter and over four billion national security, civil, Allied, and commercial GPS users.</p> <p>The GPS EI project includes critical efforts associated with the Government's responsibility to accomplish integration of multiple prime contracts across the three GPS enterprise segments, along with the transition to sustainment and operational communities. GPS EI maintains the current GPS architecture and system definition, controls and validates interfaces, ensures compatibility across current Generation II and III systems, and supports ongoing developments within the Space, Ground Control, and User Equipment Segments. GPS EI also develops/manages plans for execution and fielding of new capability like the new Military Code for use at the earliest opportunity. Further, GPS EI provides modeling, simulation, and technical analyses of impacts for Government directed enterprise level trades among the GPS segments leading to definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents to build and ensure the integrity of the enterprise technical baseline, and perform system requirements verification.</p> <p>GPS EI project funds the technical evolution, risk reduction, enterprise-level testing and delivery of all GPS Enterprise, capabilities. The GPS EI project also assists in the analysis and assessment of futures technology to continue the advancement of the GPS enterprise ensuring GPS capabilities continue to be at the forefront. Examples for Generation II include electronic protection, for Generation III, additional anti-jamming protection and additional civil signals. To accomplish this, GPS EI delivers Test and Verification capabilities, Requirements and Interface Management, and Systems Integration support across the Space, Control, and User Segments. In this capacity, GPS EI is responsible for managing this cross-program work to provide these and other capabilities.</p> <p>GPS EI's analyses guide Government decisions to ensure efficient and effective synchronization and execution across all Generation II and III GPS programs. For Enterprise-wide integration to be successful, the GPS EI: works with the GPS and NDS prime contractor teams to develop plans for early risk reduction System Integration Demonstrations to ensure system interfaces and functionality meet user and system requirements; ensures all equipment and documentation is ready when needed; integrates and analyzes enterprise schedules; and conducts formal test and verification, including Requirement Verification Plans and System Test Plans and</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2023 Air Force	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 3620F: <i>Research, Development, Test &amp; Evaluation, Space Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>
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Procedures. GPS EI performs all these efforts across all PNT programs in all acquisition phases. The Government owns the GPS Enterprise system requirements and integration, and highly leverages the GPS EI team to eliminate the need to fund a development prime contractor to perform these functions. This enhances Government control, oversight and program accountability.

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.

This PE may include necessary civilian pay expenses required to manage, execute, and deliver OCX and OCX Block 3F weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in PEs 1206392SF and 1206398SF.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	481.999	413.766	0.000	0.000	0.000
Current President's Budget	460.942	402.532	359.720	0.000	359.720
Total Adjustments	-21.057	-11.234	359.720	0.000	359.720
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-11.234			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-4.073	0.000			
• SBIR/STTR Transfer	-16.984	0.000			
• Other Adjustments	0.000	0.000	359.720	0.000	359.720

**Change Summary Explanation**

FY2021: \$4.073M transferred for higher USSF priorities.

FY2022: \$-11.234M; Congressional reduction for unjustified growth.

FY2023: The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY 2023 cannot be made in a relevant manner.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
67A021: OCX	0.000	406.805	346.343	265.341	0.000	265.341	176.824	19.208	0.000	0.000	0.000	1,214.521
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Prior Years Funding \$4,366.725M was executed in PE 1206423F.

**A. Mission Description and Budget Item Justification**

The Global Positioning System (GPS) is a space based Position, Navigation and Timing (PNT) distribution system which operates through all weather. This project funds the research and development for the Next Generation Operational Control System (OCX). This includes, but is not limited to, advanced concept development, systems engineering and analysis, modernized control segment and mission planning development, modernization/deployment of 17 monitoring stations, training simulators, integrated logistics support products, and test resources.

OCX acquisition was established to: 1) provide command and control of legacy and GPS III satellites; 2) incorporate situational awareness to support Navigation Warfare (NAVWAR) and signal monitoring; 3) enable mission capability upgrades to support a warfighter effects-based approach to operations; and 4) integrate DoD information assurance and cybersecurity controls and capabilities. OCX funds will support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, technology development, systems engineering, system development, test and evaluation efforts, pre-operational support activities, and interim contractor support, in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect the United States military and Allies' use of GPS. Additionally, funds will ensure efforts to meet Joint Requirements Oversight Council (JROC) approved required capabilities.

OCX Block 0 (through Iteration 1.5) is the Launch and Checkout System (LCS) intended to conduct Launch and Early Orbit (LEO) operations and the on-orbit checkout of all GPS III satellites. OCX Block 0 is a subset of OCX Block 1.

OCX Block 1 (adds Iterations 1.6, 1.7 and 2.1 to Block 0) fields the operational capability to control all legacy satellites and civil signals (L1C/A), military signals (L1P(Y), L2P(Y)) as well as the GPS III satellites and the modernized civil signal (L2C) and the aviation safety-of-flight signal (L5). In addition, Block 1 will field the basic operational capability to control the modernized military signals (L1M and L2M M-Code), and the globally compatible signal (L1C). It also fully meets information assurance/cyber defense requirements.

OCX Block 2 fields the advanced operational capability to control the advanced features of the modernized military signals (L1M and L2M M-Code). Blocks 1 & 2 are being delivered concurrently as a result of the Oct 2016 Nunn-McCurdy review.

In FY 2023, the effort for OCX Block 3F was captured in a new Project 67A023, OCX Block 3F, for transparency. OCX Block 3F will modify OCX Blocks 1 and 2 to field new capabilities in support of the GPS III Follow-On (GPS III F) production program and incorporate Regional Military Protection (RMP) to handle future threats. OCX Block 3F will upgrade OCX with new capabilities to synchronize with GPS III F Space Segment and Military GPS User Equipment (MGUE) Increment 2 capabilities. OCX

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX
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Block 3F will maintain backward compatibility with the existing capabilities to support the legacy GPS constellation and integrate into Block 1 and 2 and future efforts to support GPS III F. The OCX Block 3F effort will develop solutions necessary to launch, command, control, and monitor GPS III F spacecraft and include advance collection and integration of RMP high-power regional Military Code (M-Code) signals, rapid warfighter effects, and support to GPS III F auxiliary payloads including NUDET, NDS, and Search and Rescue (SAR).

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p><b>Title:</b> OCX Development</p> <p><b>Description:</b> Development of GPS OCX system to launch GPS III, operate a mixed GPS II and GPS III constellation, and provide for a robust Information Assurance system.</p> <p><b>FY 2022 Plans:</b> Complete software and hardware obsolescence remediation and replacement of obsolete IBM servers. Conduct system level Site Acceptance Testing (SAT) encompassing full system interactions, external connections, performance requirements, and key performance parameters (KPPs) / key system attributes (KSAs) culminating in system acceptance and DD250. Conduct system maturity demonstrations, known as Transition Risk Reduction Opportunities (TRROs), in support of transition from the legacy OCS to OCX. Begin formal Pre-Operational Support activities for Block 0, 1, and 2, and begin government Developmental Testing and Integrated System Testing activities. Perform contract closeout activities past DD250 for applicable contract line items. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, prototyping, etc.</p> <p><b>FY 2023 Plans:</b> Continue contractor support of the Block 0 baseline that is supporting the launch and checkout of GPS III satellites. On Blocks 1 and 2, support the transition of constellation operations from the legacy OCS to OCX, and once transition completes, support constellation operations on OCX. The government is currently projecting DD250 in 1QFY23. Continue contract closeout activities past DD250 for applicable contract line items. Continue Pre-Operational Support and Interim Contractor Support (ICS) activities for Block 0 and Blocks 1 and 2. Pre-Operational support activities occur after the program office's system acceptance but prior to the warfighter's Operational Acceptance (OA). The contractor will provide extensive critical support to certify OCX as ready for Operational Testing (OT): training, demonstrations, readiness campaigns, and enterprise level tests among ground, space, and users. The contractor will continue similar support during OT that culminates in OA. Interim Contractor Support begins immediately upon OA. Simultaneous to pre-OT and OT activities, the contractor will start planned system updates to align ground capabilities with GPS enterprise changes by the space vehicle and user equipment implemented post OCX's DD250. 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, experimentation, prototyping, etc.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b></p>	308.988	260.503	260.510

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force		<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
FY 2023 funding increased due to concurrent efforts: 1) demonstrations, mission campaigns, and GPS enterprise tests certifying Operational Test readiness; 2) support to align OCX capabilities with critical enterprise changes post DD250.				
<p><b>Title:</b> Technical Support</p> <p><b>Description:</b> Development of the Standardized Space Trainer (SST) to provide GPS III operator training. Development of Enterprise Mission Planning Systems. Facilities upgrades for Control Stations and associated equipment and servers. Systems Engineering (SE) including Technical Mission Analysis (TMA), Modernization SE and Technical Support, and Test and Evaluation (T&amp;E).</p> <p><b>FY 2022 Plans:</b> Deliver SST. Demonstrate and test SST capabilities. Continue data collection, and tuning of the monitoring stations equipment and OMSRE. Begin Pre-Operational support and complete technical support of Site Acceptance Testing (SAT), TRROs, and Integrated System Test (government developmental testing).</p> <p><b>FY 2023 Plans:</b> Support upgrade of Enterprise Mission Planning Systems as required. Continue data collection and tuning of the monitoring stations equipment as needed. Perform SE and technical support and analysis for transition to operations, development testing, and operational acceptance testing. Provide contract technical support and assist with closeout activities, as required. Achieve OCX Block 1 and 2 ready to operate.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 funding decreased due to finalizing OCX software and hardware development, requiring less technical support through contract closeout.</p>		35.509	17.495	4.831
<p><b>Title:</b> OCX Block 3F</p> <p><b>Description:</b> OCX Block 3F will upgrade OCX Block 1 &amp; 2 with new capabilities necessary for the launch and operation of GPS IIIIF and incorporate RMP to handle future threats. OCX Block 3F will maintain backward compatibility to support the legacy constellation develop solutions necessary to command, control and monitor GPS IIIIF, to include advance collection and integration of RMP high power regional M-code signals, rapid warfighter effects and support to GPS auxiliary payloads.</p> <p><b>FY 2022 Plans:</b> Completion of Milestone B in preparation for coding. Continue development and delivery of the unclassified and classified software factory to support software development and testing. Support GPS Enterprise risk reduction efforts including GPS Systems Integration (SI) Demos to mitigate risks for key interfaces and functionality between the enterprise segments, and Tabletops to mitigate cybersecurity threats. Perform initial coding and test launch and checkout capabilities in order to conduct Enterprise Integration Touch Points (EITP) to support Launch Readiness Tests (LRT) for GPS IIIIF space vehicles. Implement</p>		62.308	68.345	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
system resiliency and situational awareness necessary to operate in the contested space domain. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, prototyping, etc.			
<b>FY 2023 Plans:</b> N/A			
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 funding decreased due to establishing separate Project 67A023, OCX Block 3F, for transparency.			
<b>Accomplishments/Planned Programs Subtotals</b>	406.805	346.343	265.341

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 07 1203265F: <i>GPS III Space Segment</i>	10.398	7.207	1.626	-	1.626	3.300	7.600	0.000	-	0.000	30.131
• RDTE 05 1203269SF: <i>GPS III Follow-on</i>	275.819	246.365	325.927	-	325.927	309.651	254.374	193.931	167.388	214.192	1,987.647
• SPSF 01 GPSIII: <i>GPS III Space Segment</i>	24.146	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	464.002
• SPSF 01 GPS03C: <i>GPSIII Follow On</i>	591.404	852.918	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	7,012.805

**Remarks**

**D. Acquisition Strategy**  
The Space Force is pursuing a "Block" approach for OCX in order to respond to warfighter capability requirements. The strategy calls for capability (e.g., better signal maintainability Unified S-Band (USB), SAR GPS, and near-real time Command and Control (C2)), on-ramps for the follow-on contract for GPS III Space Vehicles (SVs) (starting no earlier than SV11) which will require updates to the OCX ground segment. Enterprise studies will ensure GPS Enterprise synchronization across space and ground segments.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GPS OCX Phase B OCX Block 1 & 2 Development	C/CPAF	Raytheon : Aurora, CO	0.000	290.832	Oct 2020	243.646	Oct 2021	69.291	Oct 2022	-		69.291	0.000	603.769	3,777.644
GPS OCX Interim Contractor Support	SS/CPIF	Raytheon : Aurora, CO	0.000	-		-		167.164	Oct 2022	-		167.164	173.341	340.505	-
GPS OCX Block 3F Development	Various	Various : Various	0.000	62.308	Mar 2021	68.345	Nov 2021	-		-		-	0.000	130.653	-
GPS OCX Technical Mission Analysis	RO	Aerospace : El Segundo, CA	0.000	13.925	Dec 2020	7.488	Nov 2021	4.731	Nov 2022	-		4.731	2.110	28.254	-
GPS OCX Enterprise SE&I	C/CPAF	TASC : El Segundo, CA	0.000	11.162	Dec 2020	2.081	Nov 2021	5.910	Nov 2022	-		5.910	4.153	23.306	-
GPS OCX Modernization/ SE & Tech Support	Various	Various : Various	0.000	5.430	Dec 2020	3.791	Nov 2021	2.872	Nov 2022	-		2.872	1.349	13.442	-
GPS OCX Standardized Space Trainer (SST)	C/CPAF	Sonalyt, Inc. : Waterford, CT	0.000	6.000	Dec 2020	0.316	Nov 2021	-		-		-	0.000	6.316	-
GPS OCX Enterprise Mission Planning	MIPR	Various : Various	0.000	5.800	Jan 2021	5.900	Jan 2022	-		-		-	0.000	11.700	-
<b>Subtotal</b>			0.000	395.457		331.567		249.968		-		249.968	180.953	1,157.945	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GPS OCX T&E	C/Various	Various : Various	0.000	4.355	Mar 2021	0.000	Mar 2022	-		-		-	0.000	4.355	-
<b>Subtotal</b>			0.000	4.355		0.000		-		-		-	0.000	4.355	N/A

<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GPS OCX FFRDC	RO	Various : Various	0.000	1.790	Oct 2020	3.401	Oct 2021	1.835	Oct 2022	-		1.835	0.859	7.885	-
GPS OCX A&AS	Various	Various : Various	0.000	4.753	Feb 2021	10.425	Nov 2021	12.638	Nov 2022	-		12.638	13.520	41.336	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A021 / OCX

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>OCX</b>				
Block 1 / 2 Certificate of Conformance	1	2022	1	2022
Block 0 / 1 / 2 Pre-operational Support and Interim Contractor Support	3	2022	1	2025
System Acceptance Test (SAT)	3	2022	3	2022
Block 1 / 2 DD250	1	2023	1	2023
OCX Block 1 Ready to Operate (RTO)	2	2023	2	2023
<b>OCX Block 3F</b>				
GPS System Simulator	1	2022	4	2022
Global PNT Capability	1	2022	4	2022

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**Exhibit R-2A, RDT&E Project Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A023 / <i>OCX Block 3F</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
67A023: <i>OCX Block 3F</i>	0.000	0.000	0.000	94.379	0.000	94.379	98.063	63.291	22.871	6.620	0.000	285.224
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

OCX Block 3F was transferred from Project 67A021 to 67A023 in FY 2023 and is not a new start. It was established as a separate project for transparency.

**A. Mission Description and Budget Item Justification**

OCX Block 3F, also known as OCX 3F, will modify OCX Command and Control (C2) for new GPS III Follow-On (GPS III F) satellites and Military GPS User Equipment (MGUE) system capabilities, including Regional Military Protection (RMP) high-powered military signal to strengthen U.S. and allied forces' GPS resiliency in contested environments to mitigate future threats, and the ability to rapidly reconfigure GPS III F satellites to create time-critical warfighter effects. OCX 3F will maintain backward compatibility with the existing OCX capabilities to support the legacy GPS constellation as well as GPS III F. OCX 3F includes critical functions to launch, command, control, and monitor GPS III F spacecraft, collect and integrate RMP high-power regional Military Code (M-Code) signals for rapid warfighter effects, and support GPS III F auxiliary payloads, including Search and Rescue (SAR) and Nuclear Detonation (NUDET) Detection System (NDS).

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2021	FY 2022	FY 2023
<b>Title:</b> OCX Block 3F	-	0.000	94.379
<b>Description:</b> This is not a new start. OCX Block 3F will upgrade OCX Block 1 & 2 with new capabilities in support of GPS III F and incorporate RMP to handle future threats. OCX 3F will maintain backward compatibility to support the legacy constellation develop solutions necessary to command, control and monitor GPS III F, to include advance collection and integration of RMP high power regional M-code signals, rapid warfighter effects and support to GPS auxiliary payloads.			
In FY 2023, OCX 3F was transferred from Project 67A021 to a separate Project 67A023 to improve transparency.			
<b>FY 2022 Plans:</b> N/A			
<b>FY 2023 Plans:</b> Continue OCX 3F C2 system development, integration and test, and training capabilities to support GPS III F launch, checkout, and on-orbit operations. Support early Mission Readiness Campaign (MRC) risk reduction integration exercises with GPS III F space vehicles. Continue software coding and development of C2 capabilities for Regional Military Protection (RMP) and Rapid Warfighter Effects (RWE). Finalize accreditation of the GPS System Simulator for 3F and work on development of the Global Position, Navigation, and Timing (PNT) critical capability. Support GPS Systems Integration (SI) Demonstrations to mitigate risks for key interfaces and functionality between the GPS space, ground and user equipment segments. Continue cybersecurity			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A023 / <i>OCX Block 3F</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2021	FY 2022	FY 2023
resiliency development and test and support Tabletop exercises to identify and mitigate cybersecurity threats. Upgrade Enterprise Mission Planning Systems to use OCX 3F. Develop OCX 3F upgrades for Standardized Space Trainer (SST) to support OCX 3F C2 operator training. 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, experimentation, prototyping, etc.			
<b><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i></b> FY 2023 funding increased due to OCX 3F effort being transferred into a new, separate Project 67A023 for transparency.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	94.379

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• SPSF 01 1203265SF: <i>GPS III Space Segment</i>	24.146	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	464.002
• SPSF 01 GPS03C: <i>GPS III Follow On</i>	591.404	852.918	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	7,012.805
• RDTE 07 1203265F: <i>GPS III Space Segment</i>	10.398	7.207	1.626	-	1.626	3.300	7.600	0.000	0.000	0.000	30.131
• RDTE 05 1203269SF: <i>GPS III Follow-On (GPS IIIIF)</i>	275.819	246.365	325.927	-	325.927	309.651	254.374	193.931	167.388	214.192	1,987.647

**Remarks**

**D. Acquisition Strategy**  
OCX Block 3F is a separate, tailored Acquisition Category (ACAT) II program. It is part of the overall GPS Enterprise Modernization effort. The OCX 3F development contract was awarded sole source to Raytheon Intelligence and Space in 3rd Quarter FY 2021. The OCX 3F program uses an agile software development approach to upgrade the OCX system to support the first GPS IIIIF satellite launch, while also maintaining backwards compatibility for C2 of the existing GPS satellite constellation.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A023 / <i>OCX Block 3F</i>
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OCX 3F Development	C/CPAF	Raytheon : Aurora, CO	0.000	-		-		69.823	Oct 2022	-		69.823	Continuing	Continuing	-
OCX 3F Technical Mission Analysis	RO	Aerospace : El Segundo, CA	0.000	-		-		3.932	Nov 2022	-		3.932	Continuing	Continuing	-
OCX 3F Enterprise SE&I	C/CPAF	TASC : El Segundo, CA	0.000	-		-		2.491	Nov 2022	-		2.491	Continuing	Continuing	-
OCX 3F Enterprise Mission Planning	MIPR	Various : Various	0.000	-		-		5.900	Jan 2023	-		5.900	Continuing	Continuing	-
OCX 3F Standardized Space Trainer (SST)	C/CPAF	Sonalyt, Inc : Waterford, CT	0.000	-		-		1.943	Nov 2022	-		1.943	Continuing	Continuing	-
<b>Subtotal</b>			0.000	-		-		84.089		-		84.089	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OCX 3F FFRDC	RO	Aerospace : El Segundo, CA	0.000	-		-		1.584	Oct 2022	-		1.584	Continuing	Continuing	-
OCX 3F A&AS	Various	Various : Various	0.000	-		-		8.406	Nov 2022	-		8.406	Continuing	Continuing	-
OCX 3F Other Support	Various	Various : Various	0.000	-		-		0.300	Oct 2022	-		0.300	Continuing	Continuing	-
<b>Subtotal</b>			0.000	-		-		10.290		-		10.290	Continuing	Continuing	N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		0.000	-	-	94.379	-	94.379	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2023 Air Force			<b>Date:</b> April 2022				
<b>Appropriation/Budget Activity</b> 3620F / 7		<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>			<b>Project (Number/Name)</b> 67A023 / <i>OCX Block 3F</i>		

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>OCX Block 3F</b>																												
GPS System Simulator																												
OCX 3F Core Software Development																												
OCX 3F Support GPS IIF Integration Exercises																												
OCX3F Satellite Integration, Launch Readiness and Ops Test																												
OCX 3F Deploy to Master Control Station (MCS) Operations																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A023 / <i>OCX Block 3F</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>OCX Block 3F</b>				
GPS System Simulator	1	2023	1	2024
OCX 3F Core Software Development	1	2023	2	2025
OCX 3F Support GPS IIIF Integration Exercises	2	2023	4	2024
OCX3F Satellite Integration, Launch Readiness and Ops Test	4	2025	1	2027
OCX 3F Deploy to Master Control Station (MCS) Operations	2	2026	2	2026

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 3620F / 7					<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>				<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A025: <i>GPS Enterprise Integrator</i>	0.000	54.137	56.189	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	110.326
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2023, PE 1206423SF, Global Positioning System III - Operational Control Segment, Project 67A025, GPS Enterprise Integrator efforts were transferred PE 1203269SF, Global Positioning System IIIIF, Project 653171, Space Programs in order to continue enterprise integration activities to support GPS IIIIF Space, Ground and User Segment.

**A. Mission Description and Budget Item Justification**

The GPS Program Office established and maintains the technical baseline and is responsible for the successful fielding of all the GPS Segments (space, control, and user). In order to successfully execute these responsibilities, GPS EI creates an enterprise architecture, integrates segment products, verifies the enterprise requirements are adequately met, develops and implements various Systems Engineering documents, defines methods of verification, conducts integrated system test and test analysis, develops and manages the Enterprise technical baseline which reflect multiple stakeholder requirements; Stakeholders include the Department of Defense (DoD), foreign governments, industry, and the general public (through four public interface specifications). Furthermore, GPS EI ensures PNT capabilities meet the warfighter's, civil agencies, commercial entities, international treaties, and over four billion global GPS users needs. Moreover, GPS EI is responsible for delivering a reliable PNT signal capability to military operators, the civil user community, and international partners. In addition, GPS EI validates the system performance in various mission threat scenarios during its development as well as provides in-depth technical expertise to enhance government control, oversight and program accountability. GPS EI is also responsible for all aspects of schedule and technical alignment across the GPS segments (space, control, and user).

More specifically, GPS EI is responsible for technical baseline management, integration, synchronizing, testing, and verifying GPS III, GPS IIIIF, Operational Control System (OCS), Next Generation Operational Control System (OCX), Military GPS User Equipment (MGUE) Increment 1 and Increment 2, and other Positioning, Navigation and Timing (PNT) investment projects. Additionally, GPS EI is responsible for creating and managing plans that provide early exercise of the products under development, compatibility analysis, and inter-segment testing. The inter-segment tests are required to prove OCX interoperability with GPS III satellites and Modernized User Equipment. More importantly, it ensures backwards compatibility with legacy systems such as, GPS Block II satellites, OCS and legacy user equipment. The GPS EI also manages the process through which the JROC validated requirements are matured and flowed down to the system segments, while remaining consistent with various interfaces. This enables the GPS system to meet Title 10 of the USC, Sec 2281, mandated PNT capabilities, and various other obligations to the international community that provide inter-operable PNT signals.

GPS EI also supports GPS spectrum protection at international forums such as the International Telecommunications Union. Such support consists of advocating on behalf of the United States (U.S.) Government when negotiating with foreign partners. In addition, GPS EI provides technical expertise to maintain relationships with other U.S. government agencies that include the Federal Aviation Administration (FAA), National Geospatial-Intelligence Agency (NGA), National Aeronautics and Space Administration (NASA) and Departments of State (DOS), Transportation (DoT), Homeland Security (DHS), and Commerce (DOC). GPS EI Spectrum also ensures

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>
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GPS priority for eight essential spectrum signals, including those required for civil air navigation and safety of life. Spectrum Protection prevents encroachment from commercial or foreign entities, which results in the preservation of warfighter's reliable signal. As a result, military operations and the integrity of the global economic infrastructure are protected.

GPS EI also manages GPS and other navigation system performance monitoring and publishes performance specifications and reports to ensure anomalies with GPS can be resolved. In addition GPS EI provides technical expertise for the development for GPS program technical baselines and public specifications to make certain that the Department of Defense (DOD) fulfills its commitment to the world for civilian GPS Service.

GPS EI also provides the PNT enterprise expertise in System Safety, Enterprise level System Security Engineering covering Acquisition Systems Program Security (i.e., personnel, industrial, operations, information, sensitive compartmented information, communication, and physical), Program Protection, Foreign Disclosure, Public Release reviews, Mission System Certification and Accreditation, and Enterprise Cybersecurity. GPS EI is accountable for the development, execution, and analysis of the PNT Enterprise Segments, cybersecurity, and associated test cases necessary to deliver a secure operational system.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2021	FY 2022	FY 2023
<p><b>Title:</b> GPS Enterprise Integrator</p> <p><b>Description:</b> The integration and technical baseline control of all elements of the GPS system (space/control/user) in support of both military and civil users. Test and verification of integrated system performance in preparation for operational test and evaluation.</p> <p><b>FY 2022 Plans:</b> Continue SSC-led integrated test, operational evaluation, and transition to operations of the Next Generation Operational Control Segment (OCX) and MGUE Increment 1 receivers. Shift responsibility for integrated test and evaluation planning from Prime contractors to Government responsibility. Shift scope of test activities from limited, internal, contractor-led development tests to expansive, integrated, multi-stakeholder, Government-led development and operational test using operational assets, facilities and resources (OCX Site Acceptance Testing, OCX Transition Risk Reduction to Operations, IST 3-1 for OCX, MOT&amp;E for OCX-dependent capabilities, IST 3-3 Phase 4, OT&amp;E for Stryker). Increase support to Government-led cybersecurity and cyber survivability test and evaluation planning and analysis. Evaluate systems for effectiveness in delivering capabilities of GPS Constellation Management, GPS Enterprise M-Code PNT Determination, GPS L2C PNT Determination, and GPS L5 PNT Determination. Support integration planning for OCX Block 3F and GPS III Follow-On SVs. Support operational demonstration of Vanguard NTS-3 program and acquisition planning for transition to operations. Participate in international Global Navigation Satellite System (GNSS) forums to advocate for GPS regulatory and technical interests. Support GPS III SV09 delivery, launch planning and integration. Support miniature serial interface with next generation application specific integrated circuit prototyping. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, prototyping, etc.</p> <p><b>FY 2023 Plans:</b></p>	54.137	56.189	0.000

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**Exhibit R-2A, RDT&E Project Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
In FY 2023, GPS Enterprise Integrator efforts were transferred PE 1203269SF, Global Positioning System IIIIF, Project 653170, Space Programs in order to continue enterprise integration activities to support GPS IIIIF Space, Ground and User Segment.			
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 funding decreased because GPS Enterprise Integrator efforts were transferred to PE 1203269SF, Global Positioning System IIIIF, Project 653171, Space Programs.			
<b>Accomplishments/Planned Programs Subtotals</b>	54.137	56.189	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTE 04 1203164F: NAVSTAR <i>Global Positioning System (User Equipment) (SPACE)</i>	367.652	434.194	382.594	-	382.594	301.635	88.742	55.913	57.012	0.000	1,687.742
• RDTE 07 1203265F: <i>GPS III Space Segment</i>	10.398	7.207	1.626	-	1.626	3.300	7.600	0.000	0.000	0.000	30.131
• RDTE 05 1203269SF: <i>GPS III Follow-On (GPS IIIIF)</i>	275.819	264.265	265.863	-	265.863	247.799	190.704	128.360	100.541	214.192	1,687.543
• RDTE 07 1203913F: NUDET <i>Detection System (SPACE)</i>	29.157	45.887	80.429	-	80.429	93.588	86.600	76.954	78.453	0.000	491.068
• SPSF 01 1203265SF: <i>GPS III Space Segment</i>	24.146	84.452	103.340	-	103.340	122.753	76.037	50.443	2.831	0.000	464.002
• SPSF 01 1203269SF: <i>GPS III</i>	591.404	601.418	657.562	-	657.562	664.149	683.441	713.958	748.954	2,100.419	6,761.305
• SPSF 01 1203164SF: <i>GPS UE Space</i>	2.256	2.274	0.950	-	0.950	0.901	0.838	0.888	0.840	0.000	8.947

**Remarks**

**D. Acquisition Strategy**  
In accordance with a "back to basics" acquisition approach the Space Force is required to exercise complete ownership of the architecture, system definition, technical baseline, and integration of the GPS space, ground, and user segments. This complex inter-segment integration requires the government to be the integrator. To execute this responsibility, the government leverages systems engineering and integration expertise from both Federally Funded Research and Development Center (FFRDC) contractors and a Systems Engineering & Integration (SE&I) contractor. The GPS EI function of the SE&I contractor is currently funded within this PE. The SE&I effort was awarded in 2015 through a full and open competition with strategy built in year over year cost reductions as requirements stabilize. A sole source SE&I Bridge Contract began in 1QFY22. A full and open SE&I follow-on contract is scheduled to be awarded by end of FY 2022.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GPS EI Enterprise SE&I	C/CPAF	TASC : El Segundo, CA	0.000	32.191	Nov 2020	31.837	Nov 2021	-		-		-	0.000	64.028	-
GPS EI Technical Mission Analysis 1	RO	Aerospace : El Segundo, CA	0.000	6.574	Oct 2020	9.346	Oct 2021	-		-		-	0.000	15.920	-
GPS EI Technical Mission Analysis 2	Various	MITRE : Various	0.000	10.073	Oct 2020	10.042	Oct 2021	-		-		-	0.000	20.115	-
GPS EI MRTA/MSTA	C/CPAF	Draper Labs : Cambridge, MA	0.000	1.544	Dec 2020	0.517	Dec 2021	-		-		-	0.000	2.061	-
GPS EI Cybersecurity	Various	Various : El Segundo, CA	0.000	1.208	Dec 2020	1.379	Dec 2021	-		-		-	0.000	2.587	-
GPS EI Additional Product Development	Various	Various : Various	0.000	1.466	Oct 2020	0.800	Oct 2021	-		-		-	0.000	2.266	-
<b>Subtotal</b>			0.000	53.056		53.921		-		-		-	0.000	106.977	N/A

<b>Management Services (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GPS EI FFRDC	Various	Various : El Segundo, CA	0.000	0.635	Oct 2020	0.165	Oct 2021	-		-		-	0.000	0.800	-
GPS EI A&AS	Various	Various : El Segundo, CA	0.000	0.238	Oct 2020	1.903	Oct 2021	-		-		-	0.000	2.141	-
GPS EI Other Support	Various	Various : Various	0.000	0.208	Oct 2020	0.200	Oct 2021	-		-		-	0.000	0.408	-
<b>Subtotal</b>			0.000	1.081		2.268		-		-		-	0.000	3.349	N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		0.000	54.137	56.189	-	-	-	110.326	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Support GPS III AFL</b>																												
GPS III SV06 Available for Launch		■																										
GPS III SV07 Available for Launch			■																									
GPS III SV08 Available for Launch							■																					
<b>Enterprise</b>																												
M-Code Early Use	■																											
Preparation and Support for OCS to OCX transition							■	■	■	■																		
Support GRAM-S/M Card Technical Requirements Verification	■	■	■	■	■	■	■	■	■																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3620F / 7	<b>R-1 Program Element (Number/Name)</b> PE 1206423SF / <i>Global Positioning System III - Operational Control Segment</i>	<b>Project (Number/Name)</b> 67A025 / <i>GPS Enterprise Integrator</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Support GPS III AFL</b>				
GPS III SV06 Available for Launch	2	2021	2	2021
GPS III SV07 Available for Launch	3	2021	3	2021
GPS III SV08 Available for Launch	1	2022	1	2022
<b>Enterprise</b>				
M-Code Early Use	1	2021	1	2021
Preparation and Support for OCS to OCX transition	1	2022	4	2022
Support GRAM-S/M Card Technical Requirements Verification	1	2021	3	2022