Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	1,696.500	309.566	373.062	299.760	-	299.760	282.138	212.374	118.298	120.550	83.139	3,495.387
67A021: *OCX*	1,696.500	265.729	313.240	236.608	-	236.608	220.491	149.355	54.046	55.075	31.843	3,022.887
67A025: *GPS Enterprise Integrator*	0.000	43.837	59.822	63.152	-	63.152	61.647	63.019	64.252	65.475	51.296	472.500
MDAP/MAIS Code: 456												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based positioning, navigation and timing 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 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.

This Program Element (PE) funds the Research & Development (R&D) for the GPS next generation operational control system (OCX) and the GPS Enterprise Integrator (EI). This includes advanced concept development, systems analysis, modernized control segment development, mission planning development, training simulators, integrated logistics support products, developmental test resources, systems engineering required to meet the government's obligations to the international, military and civil communities, and system requirements verification. 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 warfighter effects-based approach to operations and 4) integrate DoD information assurance controls and capabilities. GPS Enterprise Integrator 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.

OCX funds will support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, modernization initiatives, systems engineering, system development, test and evaluation efforts and mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Additionally, funds will ensure efforts to meet current and future Joint Requirements Oversight Council approved required capabilities.

GPS supports both military and civil users in air, space, sea and land operations. The GPS Enterprise consists of Space, Ground Control, Nuclear Detonation (NUDET) Detection System (NDS) and User Equipment Segments. The government is responsible for the integration of the GPS Segments such that they provide worldwide GPS capability to support the warfighter and over a billion national security, civil, allied, and commercial GPS users.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*

The GPS Enterprise Integrator project includes the efforts associated with the Government's prime contract tasks necessary to accomplish this critical integrating function with the entire GPS user community. The Enterprise Integrator maintains the GPS current architecture and system definition, controls and validates interfaces, ensures compatibility of Generation II and III systems, and develops/manages plans for execution and fielding of the GPS Enterprise. Further, the Enterprise Integrator 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.

In addition, the GPS Enterprise Integrator project funds the technical evolution, risk reduction, enterprise-level testing and delivery of all GPS Enterprise capabilities. Examples for Generation II include electronic protection and additional civil signals; for Generation III, additional anti-jamming protection. To accomplish this, the GPS Enterprise Integrator delivers Test and Verification capabilities, Requirements and Interface Management, and Systems Integration support across the Space, Control, and User Segments. In this capacity, the Enterprise Integrator is responsible for managing this cross-program work to provide these and other capabilities. GPS Enterprise Integrator'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 Integrator: 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, conducts formal test and verification, including Requirement Verification Plans; and System Test Plans and Procedures. GPS Enterprise Integrator performs all these efforts across all GPS programs in all acquisition phases. The government owns the Enterprise system requirements and integration, and highly leverages the Enterprise Integrator team to eliminate the need to fund a development prime contractor to perform these functions. This enhances the government control, oversight and program accountability.

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

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	371.595	383.500	303.500	-	303.500
Current President's Budget	309.566	373.062	299.760	-	299.760
Total Adjustments	-62.029	-10.438	-3.740	-	-3.740
• Congressional General Reductions	-0.462	-0.438			
• Congressional Directed Reductions	-71.500	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	50.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-11.159	-			
• Other Adjustments	-28.908	-	-3.740	-	-3.740

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2013	FY 2014
Project: 67A021: *OCX*		
Congressional Add: *GPS launch control system acceleration*	50.000	-
Congressional Add Subtotals for Project: 67A021	50.000	-
Congressional Add Totals for all Projects	50.000	-

Change Summary Explanation

FY13: -$50.0M Phase B OCX, Block 1 and 2 development ahead of need; +$50.0M GPS launch control acceleration; -$8.0M GPS/OCX FFRDC excess to need; -$5.0M enterprise-integrator FFRDC excess to need; -$8.5M enterprise integrator excess to need; -$28.908M sequestration reduction;
FY14: -$10.0M congressional program decrease
FY15: -$3.7M inflation adjustment

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A021 / *OCX*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
67A021: *OCX*	1,696.500	265.729	313.240	236.608	-	236.608	220.491	149.355	54.046	55.075	31.843	3,022.887
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based positioning, navigation and timing distribution system, which operates through all weather. This project funds the research and development for the GPS 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, training simulators, integrated logistics support products, and developmental test resources.

The OCX acquisition was established to accomplish the following four objectives: 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 warfighter effects-based approach to operations, and 4) implement DoD information assurance 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 and mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Additionally, funds will ensure efforts to meet current and future Joint Requirements Oversight Council (JROC) approved required capabilities.

OCX Block 0 (Iterations 1.4 and 1.5) is the Launch and Control 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 and 1.7 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). It also fully meets information assurance/cyber defense requirements.

OCX Block 2 (adds Iteration 2.1 to Block 1) fields the operational capability to control the modernized signals (L1M and L2M (M-Code)), and the globally compatible signal (L1C).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: OCX Development	201.290	299.209	220.736
Description: Development of the GPS next generation operational control system to launch and operate GPS II and GPS III constellation and provide a robust Information Assurance system.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Developed, implemented, and began testing of the information assurance controls required for OCX Block 0 and OCX Block 1. Continued to develop GPS III launch and checkout capability (Block 0). Continued systems engineering and development of command and control for GPS II satellites, legacy signals, and modernized signals. Conducted Iteration 1.5 Critical Design Review (CDR) (Block 0). ***FY 2014 Plans:*** Conduct qualification testing for OCX Block 0. Complete Iteration 1.6 and 1.7 systems engineering (remainder of OCX Block 1) for the command and control for GPS II satellites, legacy signals, and modernized signals. Continue systems engineering and development of remaining civil and military modernized signals (L1C and M-code) for OCX Block 2 (Iteration 2.1). ***FY 2015 Plans:*** Conduct site acceptance testing, receive approval to operate and connect, and certify & accept OCX Block 0 for launch and checkout operations of GPS-III satellites. Conduct Iteration 1.6 and 1.7 CDRs and finalize qualification testing for OCX Block 1, command and control for GPS II satellites, legacy signals, and the modernized aviation safety of life signal (L5). Conduct Iteration 2.1 CDR. Continue development of the remaining modernized civil and military signals.			
Title: Technical Support	14.439	14.031	15.872
Description: Development of the Standardized Space Trainer (SST), Modernized Mission Planning System (M2PS), and Selective Availability Anti-Spoofing Module (SAASM) Mission Planning System (SMPS) to provide GPS III operator training. Automation study to examine the feasibility of implementing control segment automation to increase command and control efficiencies. Facilities upgrades for Control Stations and associated equipment and servers. ***FY 2013 Accomplishments:*** Awarded SST contract modification and initiated development and testing efforts to support GPS III operator training for OCX Block 1. Completed minimized operational crew size study, including automation. Continued work on the facility upgrades and hardware installation to prepare for OCX testing and transition to include the Master Control Station (MCS) and Alternate Master Control Station (AMCS). ***FY 2014 Plans:*** Continue work on the SST and develop demonstration capabilities; continue development of M2PS and SMPS. Continue work on the facility upgrades to include the MCS and AMCS. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue efforts on operation and maintenance training and technical orders development. Plan, prepare, and conduct Block 1 testing and preparation activities for Block 1 DD250.			
Accomplishments/Planned Programs Subtotals	215.729	313.240	236.608

	FY 2013	FY 2014
Congressional Add: GPS launch control system acceleration	50.000	-
FY 2013 Accomplishments: GPS launch control system acceleration		
Congressional Adds Subtotals	50.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA07: PE 0305265F: *GPS III Space Segment*	281.880	200.984	212.571	-	212.571	167.576	78.447	77.366	78.837	50.884	1,148.545
• MPAF: BA05: Line Item # GPSIII: *GPS III TOA*	492.260	450.238	292.397	-	292.397	414.982	854.612	814.663	914.139	4,782.520	9,015.811
• DOT: *DOT (FAA) Civil Funding*	27.800	9.500	2.800	-	2.800	0.400	0.400	-	-	-	40.900

Remarks

DOT (FAA) funding in FY 2014 - 2017 is TBD. $45M required

D. Acquisition Strategy

The Air Force is pursuing a "Block" approach to the next generation GPS control segment (OCX) to rapidly respond to warfighter capability requirements. The Block acquisition strategy approach follows the "Back to Basics" space program acquisition philosophy which focuses on mission success and on-time delivery. Additionally, the strategy calls for capability (e.g., better signal maintainability , Unified S-Band (USB), Search and Rescue (SAR) GPS, and near-real time C2) on-ramps for the follow on contract for GPS III SVs 11+ which will require updates to the OCX ground segment. Enterprise studies will ensure GPS Enterprise synchronization across space and ground segments.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS OCX Phase B OCX Block 1 & 2 Development	C/CPAF	Raytheon : Aurora, CO	1,170.581	222.420	Jan 2013	266.340	Dec 2013	189.413	Dec 2014	-		189.413	359.358	2,208.112	-
GPS OCX Enterprise Studies	C/CPAF	SAIC : Huntington Beach, CA	29.249	6.300	Mar 2013	5.465	Dec 2013	5.656	Dec 2014	-		5.656	23.187	69.857	-
GPS OCX Modernization/ SE & Technical Support	Various	Various : Various,	49.019	3.209	Apr 2013	4.041	Jan 2014	0.342	Jan 2015	-		0.342	9.269	65.880	-
GPS OCX Standard Space Trainer (SST)	C/CPAF	Sonalyst, Inc : Waterford, CT	0.000	3.500	Mar 2013	5.000	Jan 2014	5.000	Jan 2015	-		5.000	5.000	18.500	-
GPS OCX M2PS	C/CPIF	TBD : TBD,	0.000	-		4.990	Aug 2014	10.530	Dec 2014	-		10.530	23.810	39.330	-
GPS OCX SMPS	C/CPIF	Booz Allen Hamilton Eng Services : El Segundo, CA	0.000	7.000	Apr 2013	-		-		-		-	-	7.000	-
GPS OCX Completed Activities	Various	Various : ,	289.000	-		-		-		-		-	-	289.000	-
		Subtotal	1,537.849	242.429		285.836		210.941		-		210.941	420.624	2,697.679	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A021 / *OCX*	

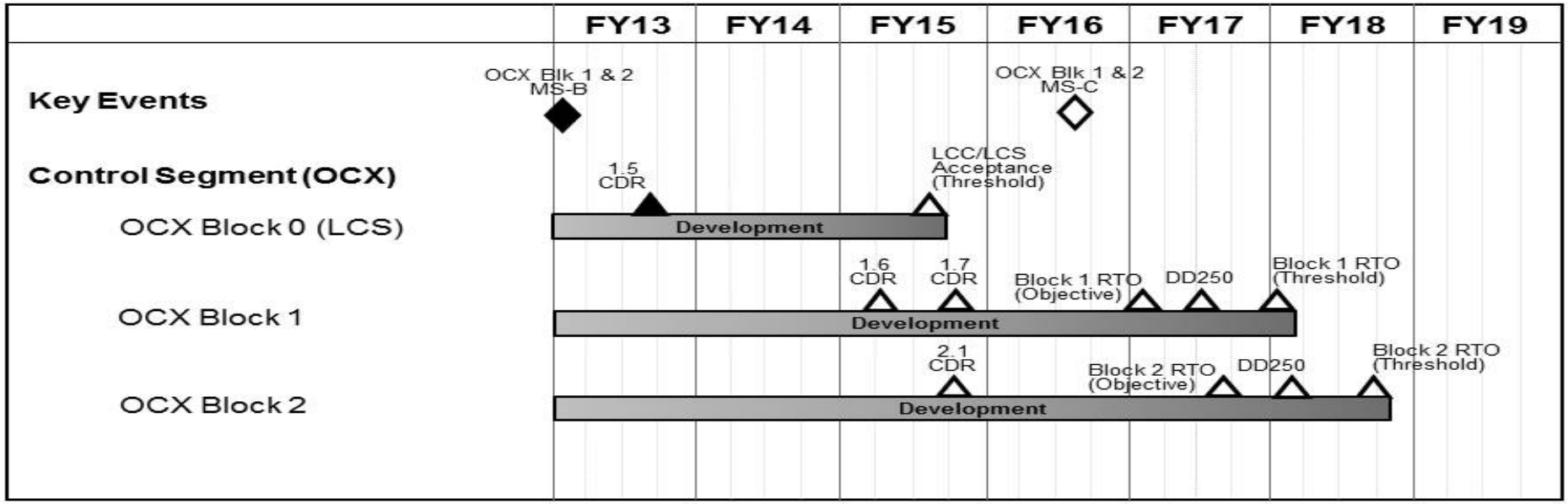
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS OCX FFRDC 1	RO	Aerospace : El Segundo, CA	80.994	10.581	Jan 2013	10.438	Jan 2014	10.855	Jan 2015	-		10.855	52.483	165.351	-
GPS OCX FFRDC 2	C/CPFF	MITRE : Bedford, MA	0.000	5.390	Apr 2013	2.839	Jan 2014	2.953	Jan 2015	-		2.953	17.272	28.454	-
GPS OCX FFRDC 3	C/CPFF	SEI : Pittsburgh, PA	0.000	1.030	Mar 2013	-		-		-		-	-	1.030	-
GPS OCX Program Management Administration (PMA)	Various	Various : ,	77.657	6.299	Apr 2013	14.127	Feb 2014	11.859	Feb 2015	-		11.859	20.431	130.373	-
		Subtotal	158.651	23.300		27.404		25.667		-		25.667	90.186	325.208	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,696.500	265.729		313.240		236.608		-		236.608	510.810	3,022.887	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*



CDR – Critical Design Review
LCC – Launch & Checkout Capability
LCS – Launch & Early Checkout System
RTO – Ready to Transition to Operations

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OCX Blocks 1 & 2 MS B	1	2013	1	2013
Software Iteration 1.5 Incremental CDR	3	2013	3	2013
Software Iteration 1.7 Incremental CDR (Include Iteration 1.6 CDR and update dates)	4	2015	4	2015
LCC/LCS Acceptance (Threshold)	3	2015	3	2015
Software Iteration 2.1 Incremental CDR	4	2015	4	2015
OCX Blocks 1 & 2 MS C	3	2016	3	2016
OCX Block 1 Ready to Transition to Operations (RTO) (Objective)	1	2017	1	2017
OCX Block 2 RTO (Objective)	3	2017	3	2017
OCX Block 1 RTO (Threshold)	1	2018	1	2018
OCX Block 2 RTO (Threshold)	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*				Project (Number/Name) 67A025 / *GPS Enterprise Integrator*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
67A025: *GPS Enterprise Integrator*	-	43.837	59.822	63.152	-	63.152	61.647	63.019	64.252	65.475	51.296	472.500
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) Enterprise Integrator (EI) integrates, synchronizes, tests and verifies the seven ACAT I Defense Acquisition Programs that constitute the GPS Enterprise to deliver reliable Positioning, Navigation, and Timing signal capability to military operators, the civil user community, and international partners. The Government Program Office owns and approves the technical baseline and is responsible for the successful fielding of all the GPS Segments. To successfully execute its responsibilities, the Government relies upon the specific expertise of the GPS Enterprise Integrator to integrate segment products and verify that system requirements are met.

The GPS Enterprise Integrator project is responsible for the development and management of the Enterprise technical baseline. The technical baseline consists of more than 6400 specifications and 330 interface documents. The technical baseline reflects the requirements of multiple stakeholder groups such as the Department of Defense (DoD), foreign governments and allies, industry, the general public (through four Interface specifications), and ensures GPS capabilities meet the needs of warfighters, civil agencies, commercial entities, international treaties, and over 4B global GPS users. The Enterprise Integrator manages the process through which the JROC requirements are matured and flowed down to the segments of the system and that interfaces are clearly defined. This enables the GPS system to meet Title 10 of the U.S. Code, Section 2281, mandated GPS capabilities as well as obligations to the international community and allied nations, to provide, inter-operable PNT signals. The Enterprise Integrator is also responsible for all aspects of schedule and technical alignment across the segments. The Enterprise Integrator creates and manages plans that provide for early exercise of the products under development, compatibility analysis, and intersegment testing thereby reducing risk. The intersegment tests are required to prove the interoperability of OCX, GPS III, and modernized user equipment. The Enterprise Integrator's test efforts also extend to validating that GPS can be used for civil aircraft navigation.

The Enterprise Integrator activity supports the Government Program Office's GPS spectrum protection at international forums such as the International Telecommunications Union, assisting the United States when negotiating with foreign partners. In addition, the Enterprise Integrator provides technical expertise and continuity for maintaining relationships with other U.S. government agencies to include the FAA, NGA, NASA, as well as the Departments of State, Transportation, Homeland Security, and Commerce. Spectrum expertise from the Enterprise Integrator ensures GPS priority over eight essential spectrum signals such as the safety of life signal, L5, which is required for civil air navigation. Spectrum Protection prevents encroachment from commercial or foreign entities, which preserves reliable signals to warfighters and civil users, ensuring military operations and the integrity of the global economic infrastructure. The Enterprise Integrator is the GPS enterprise expert for Information Assurance (IA), System Safety, and System Security, ultimately ensuring a protected GPS Signal for both the military and civil users from emerging cyber threats. The Enterprise Integrator is accountable for the development, execution, and analysis of OCX IA test cases, which are necessary to deliver a secure, operational system, protected against adversarial cyber-attacks intended to deny, disrupt, or degrade GPS operations.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

The Enterprise Integrator supports the Government development and implementation of various Systems engineering documents, defines the methods of verification, conducts the analyses or tests, and assists the government in leading Integrated System Tests. The Enterprise Integrator validates the system performance in various mission threat scenarios during its development. The Enterprise Integrator provides deep, technical, highly specific expertise that the government utilizes to enhances the government control, oversight and program accountability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: GPS Enterprise Integrator	43.837	59.822	63.152
Description: The integration and configuration control of all elements of the GPS system (space/ground/user equipment) with one another in support of both military and civil users. Execute five integrated exercises and rehearsals between space and ground leading up to the launch of GPS III SV-01. ***FY 2013 Accomplishments:*** Continued Enterprise system definition and integration across Generation II and III (space, control, and user segments). Conducted OCX-GPS III risk reduction demos for interface and functionality validation; evolved GPS III Space Modernization Initiatives specifications and interface control documents. Facilitated OCX Block 1&2 Milestone B. Conducted Launch and Checkout Capability Exercise and Rehearsals in support of GPS III SV-01. Conducted MGUE International Test demonstrations and integrated tests between ground, space and user segments. Completed third integration exercise. ***FY 2014 Plans:*** Conduct fourth integration exercise and begin planning for fifth exercise, during which LCS software iteration 1.5 will be in use. Conduct system integration demos to simulate key aspects of launch and on orbit operations. Oversee multiple Mission Readiness testing activities. Update tech baseline for M-Code Modernization to support MGUE certification towards RFP Release. ***FY 2015 Plans:*** Conduct fifth integration exercise, which will conclude the 'exercise' portion of readiness for launch. Conduct launch and early orbit operations rehearsals on delivered system between ground and space segment in support of SV01 launch. Conduct multiple system integration demos. IST 3-1 testing will be conducted before and after launch. Perform risk reduction demonstration for M-code.			
Accomplishments/Planned Programs Subtotals	43.837	59.822	63.152

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA04: PE 0305164F: *NAVSTAR Global Positioning System (User Equipment) (Space)*	63.687	127.172	156.659	-	156.659	152.011	155.335	97.590	99.506	55.700	907.660
• RDTE: BA07: PE 0305164F: *NAVSTAR Global Positioning System (User Equipment) (Space)*	26.011	-	-	-	-	-	-	-	-	-	26.011
• RDTE: BA07: PE 0305165F: *NAVSTAR Global Positioning System (Space and Control Segments)*	12.436	-	-	-	-	-	-	-	-	-	12.436
• RDTE: BA07: PE 0305265F: *GPS III Space Segment*	281.880	200.984	212.571	-	212.571	167.576	78.447	77.366	78.837	50.884	1,148.545
• RDTE: BA07: PE 0305913F: *NUDET Detection System*	58.074	42.506	20.468	-	20.468	6.444	4.230	13.756	14.016	Continuing	Continuing
• MPAF: BA05: Line Item # MGPS00: *Global Positioning System (Space)*	48.084	55.895	52.090	-	52.090	22.615	13.393	-	-	-	192.077
• MPAF: BA05: Line Item # GPSIII: *GPS III TOA*	492.260	450.238	292.397	-	292.397	414.982	854.612	814.663	914.139	4,782.520	9,015.811

Remarks

D. Acquisition Strategy

In accordance with a "back to basics" acquisition approach and exercise of strong oversight of development contractors, the Air Force is required to exercise complete ownership of the architecture, system definition, and integration of the GPS space, ground, and user segments. This complex inter-segment integration is traditionally performed by a prime contractor under a systems development contract. To eliminate the need to fund a development prime contractor to perform these functions, 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. GPS Enterprise Integrator function of the SE&I contractor is currently funded within this Program Element (PE). The SE&I effort was originally procured in 2007 through a full and open competition. It was subsequently extended to support the timing and competitive award of a new SE&I contract which is currently in a full and open competition source selection. The SE&I follow-on strategy builds in year over year cost reductions as requirements stabilize.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A025 / *GPS Enterprise Integrator*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS Enterprise Integrator	C/CPAF	Leidos : El Segundo, CA	0.000	27.979	Jan 2013	40.290	Jan 2014	42.844	Jan 2015	-		42.844	208.092	319.205	-
GPS Enterprise Integrator 2	MIPR	Aerospace : El Segundo, CA	0.000	6.509	Oct 2012	9.626	Oct 2013	10.020	Oct 2014	-		10.020	56.965	83.120	-
GPS Enterprise Integrator 3	WR	MITRE : Bedford, MA	0.000	8.725	Oct 2012	8.526	Oct 2013	8.858	Oct 2014	-		8.858	36.116	62.225	-
		Subtotal	0.000	43.213		58.442		61.722		-		61.722	301.173	464.550	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Admistration	Various	Various : El Segundo, CA	0.000	0.624	Oct 2012	1.380	Oct 2013	1.430	Oct 2014	-		1.430	4.516	7.950	-
		Subtotal	0.000	0.624		1.380		1.430		-		1.430	4.516	7.950	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A025 / *GPS Enterprise Integrator*	

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	43.837		59.822		63.152		-		63.152	305.689	472.500	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

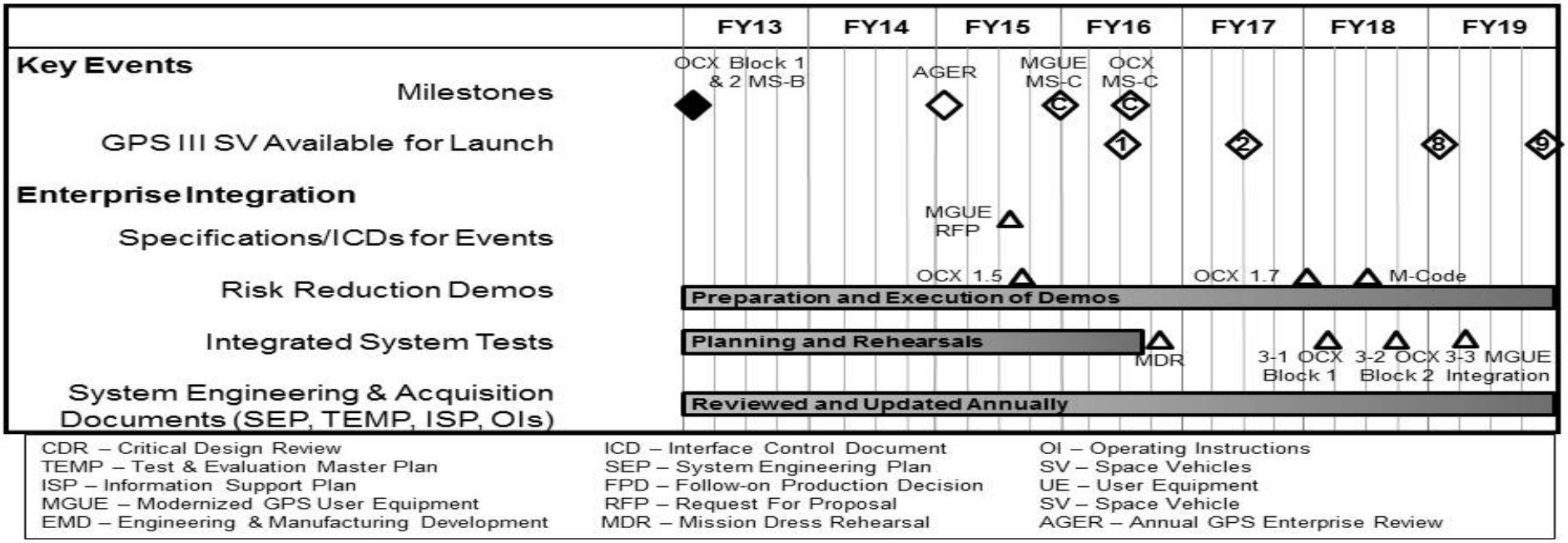


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Specifications and ICDs for GPS III Space Modernization Initiative Technical Baseline	1	2015	1	2015
GPS III SV01 Delivery	3	2016	3	2016
Risk Reduction Demonstration for M-Code (18.1)	3	2018	3	2018
GPS III SV02 Delivery	3	2017	3	2017