Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force											Date: February 2016	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	202.600	152.144	141.861	278.147	0.000	278.147	235.790	188.750	170.937	173.989	247.888	1,792.106
643833: *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*	202.600	152.144	141.861	278.147	0.000	278.147	235.790	188.750	170.937	173.989	247.888	1,792.106
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 447												

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space-based radio Positioning, Navigation, and Timing (PNT) distribution system. GPS User Equipment (UE) consists of standardized receivers, antennas, antenna electronics, etc., grouped together in sets to derive navigation and time information transmitted from GPS satellites. These receiver sets are used by DoD. RDT&E funds UE development, integration, test, and analysis for new PNT receiver capabilities in Navigation Warfare (NAVWAR) across all military platforms using GPS services.

The Military Global Positioning System User Equipment (MGUE) Increment 1 program is responsible for the development of standard modernized receiver form factors for the Service-nominated lead platforms identified in the MGUE Capability Development Document (CDD), approved by the Joint Requirements Oversight Council (JROC) on 24 Jul 2014. This new family of modernized GPS receivers will deliver significantly improved capability to counter current and emerging PNT threats and enable military operations in a NAVWAR environment where current legacy receiver performance would be compromised. MGUE Increment 1 received a Milestone A decision in April 2012 and is in the Technology Maturation and Risk Reduction phase. The program received direction in February 2014 from the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) to execute a new acquisition strategy, accelerating the program to provide test units faster to facilitate military end users. Based on direction from USD(AT&L) in the April 2015 Deep Dive, the MGUE program is seeking a tailored Milestone B/C decision in 3QFY16.

The MGUE Increment 2 effort is planned to begin in FY17 and will continue to employ Military Code (M-Code) receiver technology into additional applications (space receiver, precision guided munitions, and handheld receiver) to meet service requirements. This effort leverages the MGUE Increment 1 technology to the maximum extent while addressing producibility of M-code integrated circuits far into the future.

Joint Service System Management Office (JSSMO)
Global Positioning System (GPS) receivers enable precision navigation solutions for warfighters across the spectrum of land, sea and air domains. In 2006, Assistant Secretary of Defense for Networks and Information Integration (ASD (NII)) directed the Air Force to develop production ready M-Code components to meet Service needs. Public Law 111-383 913, effective 7 January 2011, prohibits procurement of GPS equipment unless it is M-Code capable after FY17. The completion of card-level compatibility and security certifications in 2016/2017 will enable integration of M-Code capability into military GPS Receivers.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

Additionally, in 2010, the Federal Aviation Administration (FAA) published new Automatic Dependent Surveillance Broadcast (ADS-B) rules effective January 1, 2020. The ADS-B rule requires platform operators to have ADS-B avionics installed and operating in order to fly Mode S IFF Transponder equipped aircraft into FAA and/or International Civil Aviation Organization (ICAO) Mode S enabled Air-to-Air and Air-to-Ground, Surveillance airspace. DoD aircraft are not exempt from the FAA mandate.

FY17 funding includes Embedded GPS/Inertial Navigation System (INS) (EGI), Minaturized Airborne GPS Receiver (MAGR), Defense Advanced GPS Receiver (DAGR), and Government Reference Architecture development. This acquisition will enable the United States Air Force (USAF) to satisfy the DoD and civil mandates described above.

Activities also include, but are not limited to, both current program planning and execution and future program planning.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	156.221	142.288	219.043	0.000	219.043
Current President's Budget	152.144	141.861	278.147	0.000	278.147
Total Adjustments	-4.077	-0.427	59.104	0.000	59.104
• Congressional General Reductions	0.000	-0.427			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-4.077	0.000			
• Other Adjustments	0.000	0.000	59.104	0.000	59.104

Change Summary Explanation

FY17: $22.192M was added to fund the Increment 1 program to the Air Force cost estimate.
FY17: $36.912M was added to fund Receiver Development.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: MGUE Increment 1	107.279	52.095	67.970
Description: The MGUE Increment 1 program will develop standard modernized receiver form factors for the service-nominated lead platforms identified in the MGUE Inc 1 CDD.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Continued MGUE Increment 1 Technology Maturation and Risk Reduction phase. Developed initial software and hardware prototypes. Implemented advanced cryptography and electronic warfare defense for two form factors (aviation/maritime and ground). Participated in operational demonstrations, piloted initial manufacturing process, assessed component reliability, and began security certification efforts. ***FY 2016 Plans:*** Complete Milestone B/C. Begin developmental test of hardware and software. Continue security certification efforts. Assist each lead platform office to integrate and test M-Code receivers in their respective platforms. Evaluate Application Specific Integrated Circuit(ASIC) producibility and initiate long term M-Code ASIC producibility efforts. ***FY 2017 Plans:*** Complete developmental test. Complete environmental and electromagnetic interference testing. Continue security certification efforts. Assist each lead platform office to integrate and test M-Code receivers in their respective platforms.			
Title: MGUE Increment 2 ***Description:*** The MGUE Increment 2 effort is planned to begin in FY17 and will continue to employ M-Code receiver technology into additional applications (space receiver, precision guided munitions, and handheld receiver) to meet Service requirements. This effort leverages the MGUE Increment 1 technology to the maximum extent while ensuring producibility of M-Code integrated circuits far into the future to support DoD PNT requirements. ***FY 2015 Accomplishments:*** N/A ***FY 2016 Plans:*** N/A ***FY 2017 Plans:*** Transition M-Code capability into space receivers and precision guided munitions. Initiate an effort to produce a M-Code handheld. Begin activities to ensure producibility of M-Code ASICs. The MGUE Program Office serves as the GPS technical expertise center for non-lead platforms as the DoD implements the mandate for M-Code integration.	0.000	0.000	24.870
Title: Advanced Technology ***Description:*** Advanced Technology includes efforts to mature technology for future GPS receivers called out in the MGUE CDD. These efforts aim to find innovative solutions to increase resiliency in GPS performance and improve on size, weight, power, and cost of military receivers.	8.694	4.800	7.600

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Researched new technologies to augment military GPS capabilities and explored alternate sources of position, navigation, and timing for the warfighter. Invested in key technologies for advanced receivers to include modernized GPS simulators and clocks, advanced antennas, programmable receivers and software based receivers. ***FY 2016 Plans:*** Continue researching new technologies to augment military GPS and explore alternate sources of position, navigation, and timing for the warfighter. Continue investing in key technologies for advanced receivers to include modernized GPS simulators and clocks, advanced antennas, programmable receivers and software based receivers as part of targeted risk reduction efforts. ***FY 2017 Plans:*** Stand up the new M-Code Cryptographic Initialization Capability. The new program prepares for an improved key handling and tracking system for future M-Code GPS equipment. Research new technologies to augment military GPS and also explore alternate sources of position, navigation, and timing for the warfighter.			
Title: System/Platform Integration and Performance Certification	20.839	72.946	125.047
Description: Technical and operational modernization impact analysis for MGUE Service lead platform integration. Development of DoD Policy, Strategy & Resource Requirements for MGUE Compatibility Certification. Compatibility Certification ensures future military GPS receivers continue working in all environments and concepts of operations called for by US Strategic Command. ***FY 2015 Accomplishments:*** Began prototype integration and testing of the aviation form factor into a GPS receiver box for the B-2. Successfully flew first prototype M-Code receiver and tracked M-code in C-12J aircraft during live sky testing at Nellis Air Force Base. Completed size and interface checks with Army and Air Force ground platform receivers. Assisted in integration of current GPS receivers for joint service platforms. Updated GPS Enterprise Interface Control Documents to include the new capabilities provided by the modernized GPS architecture. ***FY 2016 Plans:*** Continue lead platform integration efforts. Complete B-2 lab testing in preparation for B-2 Operational Testing. Begin GPS-based Positioning, Navigation, and Timing Service (GPNTS) integration and test activities supporting M-code migration into the Arleigh Burke Destroyer. Begin Army Defense Advanced Global Positioning System Receiver (DAGR) Distributed Device integration and test activities supporting M-code migration into the Stryker. Begin Marine Joint Light Tactical Vehicle host equipment integration and test. Continue developmental and characterization testing. Continue updating GPS Enterprise Interface Control Documents for new M-Code receivers. ***FY 2017 Plans:***			

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue lead platform integration efforts in support of operational test events. Complete the first security and compatibility certification of MGUE ground form factors. Assist DoD integration of M-Code GPS receivers for joint service non-lead platforms to comply with FY17 M-Code mandate.			
Title: Information Assurance and Test/Evaluation ***Description:*** Develop, implement and maintain GPS Security Certification programs. ***FY 2015 Accomplishments:*** Processed Modernized Security Evaluations/Tests for Selective Availability Anti-spoofing Module (SAASM) and other legacy GPS receiver equipment. Reviewed, approved, and tracked SAASM/legacy receiver certified platforms and integrated applications for all of the Department of Defense. This includes security approval for other than lead platforms, such as munitions, ground monitoring stations, and handhelds. Enforced policy and other requirements related to receiver compatibility accreditation with the GPS signal in space. ***FY 2016 Plans:*** Continue Modernized Security Evaluations/Tests for SAASM and other legacy GPS receiver equipment. Review, approve, and track SAASM/legacy receiver certified platforms and integrated applications for all of OSD. Continue MGUE security planning activities to include security approval for other than lead platforms, such as munitions and potentially handhelds. Continue to enforce policy and other requirements related to receiver compatibility accreditation with the GPS signal in space. Complete verification and validation required for security certification for all contractor's MGUE design. Complete Security Certification for MGUE receivers. ***FY 2017 Plans:*** Support lead platform integration and test activities. Complete first M-Code certification process for MGUE receivers. Continue Modernized Security Evaluations/Tests for SAASM and other legacy GPS receiver equipment. Review, approve, and track SAASM/ legacy receiver certified platforms and integrated applications for all of OSD. Continue MGUE security planning activities to include security approval for non-lead platforms. Continue to enforce policy and other requirements related to receiver compatibility accreditation with the GPS signal in space.	15.332	12.020	15.748
Title: JSSMO Embedded GPS/INS - Modernized (EGI-M) ***Description:*** Incorporates M-Code and ADS-B capability into EGI receivers while addressing parts obsolescence ***FY 2017 Plans:*** Develop a common core EGI-M design, begin missionization for initial platform and initiate box level testing.	-	-	20.936
Title: JSSMO MAGR 2K-M	-	-	8.574

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Incorporates M-Code capability into MAGR 2K receivers while addressing parts obsolescence and providing a pathway to ADS-B Out implementation. ***FY 2017 Plans:*** Complete MAGR 2K-M design and begin box level testing.			
Title: JSSMO DAGR-M ***Description:*** Integrates M-Code capability into DAGR receivers, providing M-Code capability for ground personnel and vehicles. ***FY 2017 Plans:*** Initiate design activities to incorporate the M-Code capability into the DAGR receiver.	-	-	3.728
Title: JSSMO Government Reference Architecture (GRA) ***Description:*** Establish a GRA embodying open systems architecture concepts enabling robust, resilient GPS receiver designs which support future modifications at an accelerated pace and at lower cost than the current contractor proprietary architecture. ***FY 2017 Plans:*** Continue selection and/or development of hardware standards and software navigation communication protocols, such as Universal Navigational Interface (UNI). Begin development of ground demonstrator for the GRA architecture.	-	-	2.928
Title: JSSMO Strategic Planning ***Description:*** Conduct strategic planning for GPS receiver modernization. ***FY 2017 Plans:*** Conduct strategic planning for GPS receiver, antenna and architecture development in support of M-Code incorporation and to accommodate mitigation of emerging navigation warfare threats; also travel and other PMA.	-	-	0.746
Accomplishments/Planned Programs Subtotals	152.144	141.861	278.147

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPAF: BA 03: 836730: *Navstar GPS Space*	2.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.065

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force	Date: February 2016
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SPAF: BA 01: GPSSPC: *Navstar GPS Space*	0.000	2.029	2.169	0.000	2.169	2.193	2.199	2.238	2.278	0.000	13.106

Remarks

E. Acquisition Strategy

The MGUE program has developed a comprehensive acquisition strategy to provide modernized GPS capabilities to US and Allied forces by developing a commercial market driven approach. This strategy establishes the signal compatibility and security criteria along with a process for evaluating components to enable rapid movement from development to fielding. The pillars of this effort are: (a) establishing time certain and low risk development; (b) bounding requirements to leverage mature technology to the maximum extent possible; (c) focusing on the development of form factors based on well-defined standards to support lead platform integration; and (d) implementing a proactive, collaborative MGUE platform integration activity to mitigate risk and reduce cost for DoD force structure modernization.

The MGUE program awarded three sole source contracts for the Increment 1 Technology Development Phase effort in September 2012, as follow-on efforts to the competitively awarded Modernized User Equipment (MUE) contracts awarded in June 2006. The effort spans the Technology Maturation and Risk Reduction Phase through design and includes integration and test of M-code receivers into Service-nominated lead platforms. This effort also includes the security and compatibility certification of GPS receiver cards as a part of the Integration effort. The Service lead platforms will select from the available vendors to integrate and perform operational testing with funding from the MGUE program. This supports compliance with Public Law 111-383, section 913.

MGUE Increment 2 is in the Materiel Solutions Analysis phase. The MGUE program is developing an acquisition strategy to expand upon the commercial, market driven approach utilized in Increment 1 while leveraging the core M-code technology developed in Increment 1. MGUE Increment 2 migrates M-code receiver solutions into additional platforms, including a space receiver, precision guided munitions receiver, and a handheld device. MGUE Increment 2 addresses long-term producibility of M-code integrated circuits far into the future.

JSSMO

Modifications to existing receivers designs will occur via Engineering Change Proposals (ECPs)/Task Orders on existing USAF contracts. There is associated procurement funding by aircraft platforms tied to this development activity.

F. 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 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*	**Project (Number/Name)** 643833 / *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MGUE Increment 1 Technology Development (Rockwell)	C/CPIF	Rockwell Collins : Cedar Rapids, IA	40.147	32.446	Nov 2014	7.720	Jan 2016	19.013	Jan 2017	0.000		19.013	0.000	99.326	-
MGUE Increment 1 Technology Development (Raytheon)	C/CPIF	Raytheon : El Segundo, CA	36.657	34.800	Nov 2014	16.000	Jan 2016	13.056	Jan 2017	0.000		13.056	0.000	100.513	-
MGUE Increment 1 Technology Development (L3)	C/CPIF	L3 : Anaheim, CA	37.451	9.396	Nov 2014	6.320	Jan 2016	7.266	Jan 2017	0.000		7.266	0.000	60.433	-
MGUE Increment 1 Pre-Tech Development	C/CPAF	Various : Various	7.788	8.694	Jan 2015	4.800	Jan 2016	7.600	Jan 2017	0.000		7.600	19.000	47.882	-
MGUE Increment 1 MGUE Demonstrations	C/CPFF	TBD : TBD	15.000	9.000	Jan 2015	0.000		0.000		0.000		0.000	8.500	32.500	-
MGUE Increment 1 Platform Integration	C/CPAF	Various : Various	4.653	11.860	Jan 2015	63.141	Jan 2016	101.288	Jan 2017	0.000		101.288	203.386	384.328	-
MGUE Increment 1 Compatibility Certification	C/CPAF	Various : Various	3.048	3.500	Jan 2015	4.500	Jan 2016	2.900	Jan 2017	0.000		2.900	13.200	27.148	-
MGUE Increment 1 Information Assurance	C/CPAF	Various : Various	5.130	4.950	Jan 2015	3.000	Jan 2016	6.847	Jan 2017	0.000		6.847	14.795	34.722	-
MGUE Increment 1 Security Certification	C/CPAF	Various : Various	10.805	5.786	Jan 2015	4.900	Jan 2016	4.900	Jan 2017	0.000		4.900	21.600	47.991	-
MGUE Increment 1 Reliability Testing	C/CPFF	Various : Various	0.000	0.000		0.000		14.800	Jan 2017	0.000		14.800	0.000	14.800	0.000
MGUE Increment 2	C/CPAF	Various : Various	0.000	0.000		0.000		24.870	Jan 2017	0.000		24.870	588.130	613.000	-
MGUE Technical Mission Analysis	MIPR	Various : El Segundo, CA	0.000	2.733	Oct 2015	9.767	Oct 2016	10.109	Oct 2017	0.000		10.109	44.251	66.860	-
MGUE Increment 1 Enterprise SE&I	C/CPAF	TASC : El Segundo, CA	8.903	5.479	Nov 2014	5.305	Nov 2015	6.059	Nov 2015	0.000		6.059	21.402	47.148	-
JSSMO EGI-M 1	SS/CPFF	Honeywell : Clearwater, FL	0.000	0.000		0.000		7.586	Dec 2016	0.000		7.586	2.830	10.416	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*	**Project (Number/Name)** 643833 / *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSSMO EGI-M 2	SS/CPFF	Northrop Grumman : Woodland Hills, CA	0.000	0.000		0.000		13.350	Dec 2016	0.000		13.350	2.750	16.100	-
JSSMO MAGR 2K-M	SS/CPFF	Raytheon : El Segundo, CA	0.000	0.000		0.000		8.574	Dec 2016	0.000		8.574	5.430	14.004	-
JSSMO DAGR	SS/CPFF	Rockwell Collins : Des Moines, IA	0.000	0.000		0.000		3.728	Dec 2016	0.000		3.728	2.110	5.838	-
JSSMO GRA	TBD	Not specified. : TBD	0.000	0.000		0.000		2.928	Dec 2016	0.000		2.928	1.801	4.729	-
JSSMO Strat Planning	TBD	Not specified. : TBD	0.000	0.000		0.000		0.746	Apr 2017	0.000		0.746	0.153	0.899	-
		Subtotal	169.582	128.644		125.453		255.620		0.000		255.620	949.338	1,628.637	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MGUE Increment 1 Test and Evaluation (1)	C/CPAF	SPAWAR : San Diego, CA	1.472	2.346	Jan 2015	2.200	Jan 2016	2.600	Jan 2017	0.000		2.600	8.677	17.295	-
MGUE Increment 1 Test and Evaluation (2)	Various	Various : Various	2.836	2.250	Jan 2015	1.920	Jan 2016	1.401	Jan 2017	0.000		1.401	16.913	25.320	-
		Subtotal	4.308	4.596		4.120		4.001		0.000		4.001	25.590	42.615	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*	**Project (Number/Name)** 643833 / *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MGUE Increment 1 FFRDC	Various	Aerospace : El Segundo, CA	14.705	8.538	Dec 2014	2.776	Dec 2015	3.318	Oct 2016	0.000		3.318	12.994	42.331	-
MGUE Increment 1 FFRDC 2	Various	MITRE : El Segundo, CA	5.450	1.622	Dec 2014	0.383	Dec 2015	0.396	Dec 2016	0.000		0.396	1.467	9.318	-
MGUE Increment 1 A&AS	Various	Various : Various	8.555	8.465	Dec 2014	8.889	Dec 2015	14.592	Dec 2016	0.000		14.592	27.021	67.522	-
MGUE Increment 1 Other Support	Various	Various : Various	0.000	0.279	Dec 2014	0.240	Dec 2015	0.220	Dec 2016	0.000		0.220	0.944	1.683	-
		Subtotal	28.710	18.904		12.288		18.526		0.000		18.526	42.426	120.854	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	202.600	152.144		141.861		278.147		0.000		278.147	1,017.354	1,792.106	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*	**Project (Number/Name)** 643833 / *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*

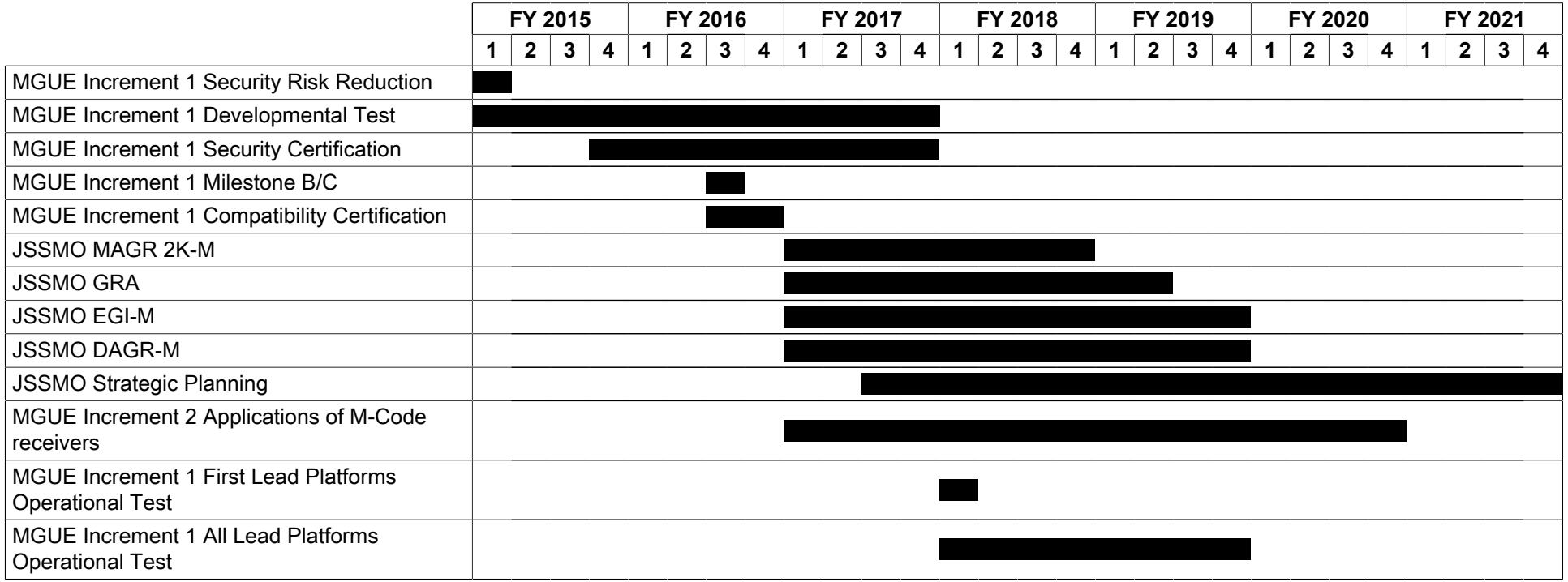

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 4	**R-1 Program Element (Number/Name)** PE 0305164F / *NAVSTAR Global Positioning System (User Equipment) (SPACE)*	**Project (Number/Name)** 643833 / *MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MGUE Increment 1 Security Risk Reduction	1	2015	1	2015
MGUE Increment 1 Developmental Test	1	2015	4	2017
MGUE Increment 1 Security Certification	4	2015	4	2017
MGUE Increment 1 Milestone B/C	3	2016	3	2016
MGUE Increment 1 Compatibility Certification	3	2016	4	2016
JSSMO MAGR 2K-M	1	2017	4	2018
JSSMO GRA	1	2017	2	2019
JSSMO EGI-M	1	2017	4	2019
JSSMO DAGR-M	1	2017	4	2019
JSSMO Strategic Planning	3	2017	4	2021
MGUE Increment 2 Applications of M-Code receivers	1	2017	4	2020
MGUE Increment 1 First Lead Platforms Operational Test	1	2018	1	2018
MGUE Increment 1 All Lead Platforms Operational Test	1	2018	4	2019