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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0305164F: NAVSTAR Global Positioning System (User Equipment) (SPACE)							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	96.840	137.233	-	137.233	158.614	153.769	157.390	98.840	Continuing	Continuing
643833: MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP	0.000	0.000	96.840	137.233	-	137.233	158.614	153.769	157.390	98.840	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
MDAP/MAIS Code(s): 166,447												
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
^{##} The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
Starting in FY13, Military GPS User Equipment (MGUE) funding is transferred to this project in PE 0305164F.												
The Global Positioning System (GPS) is a space-based radio Positioning, Navigation, and Time (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 MGUE Increment 1 program is responsible for the development of standard modernized receiver form factors for the service-nominated lead platforms identified in the draft MGUE Capability Development Document (CDD). 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 2 is an effort to develop a government-defined Common GPS Module (CGM) and reduce the size, weight, power and cost (SWaP-C) of military GPS receivers. MGUE Increment 2 received Materiel Development Decision (MDD) approval and authorization for entry into Materiel Solution Analysis phase.												
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.												

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3600: Research, Development, Test & Evaluation, Air Force		PE 0305164F: NAVSTAR Global Positioning System (User Equipment) (SPACE)				
BA 4: Advanced Component Development & Prototypes (ACD&P)						
B. Program Change Summary (\$ in Millions)		FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		0.000	96.840	125.926	-	125.926
Current President's Budget		0.000	96.840	137.233	-	137.233
Total Adjustments		0.000	0.000	11.307	-	11.307
• Congressional General Reductions		-	0.000			
• Congressional Directed Reductions		-	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		-	0.000			
• Congressional Directed Transfers		-	0.000			
• Reprogrammings		0.000	0.000			
• SBIR/STTR Transfer		0.000	0.000			
• Other Adjustments		0.000	0.000	11.307	-	11.307
Change Summary Explanation						
FY 2014: \$11.307M increase to fund risk reduction efforts for MGUE Increment 2.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2012	FY 2013	FY 2014
Title: MGUE Increment 1 Technology Development				0.000	53.343	73.800
Description: The MGUE program will develop standard modernized receiver form factors for the service-nominated lead platforms identified in the draft MGUE CDD.						
FY 2013 Plans:						
Execute MGUE Increment 1 Technology Development phase. Complete System Requirements Review (SRR), System Design Review (SDR), prepare for Pre-EMD and MS-B reviews.						
FY 2014 Plans:						
Execute MGUE Increment 1 Technology Development phase. Complete Preliminary Design Review (PDR), Pre-EMD review, and MS-B review in preparation for FY15 MS-B approval. Commence EMD source selection with tech sample evaluation.						
Title: Advanced Technology				0.000	7.000	15.000
Description: Advanced Technology efforts include studies to mature technology for Increment 2 to satisfy the draft MGUE CDD.						
FY 2013 Plans:						

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Execute trade studies to support development of a materiel concept for MGUE Increment 2. Coordinate interoperability of Electronic Attack (EA) capabilities with other Navwar disciplines. Continue MGUE Increment 2 Technology Maturation thru Navwar Trinity, CSAC, Software Defined Radio (SDR), and alternate security implementation. FY 2014 Plans: Execute trade studies to support materiel concept development for MGUE Increment 2. Implement targeted risk reductions by investing in key technologies for advanced receivers to include, but not limited to, Application Specific Integrated Circuit (ASIC) and Field Programmable Gate Arrays (FPGA). Continue MGUE Increment 2 Technology Maturation thru Navwar Trinity, Chip Scale Atomic Clock (CSAC), Software Defined Radio (SDR), and alternate security implementation.				
Title: SE&I Description: SE&I provides critical GPS program integration activities for successful synchronization with GPS Space and Ground segments. FY 2013 Plans: Support program reviews, testing, enterprise integration, security and performance certification activities. Continue coordinating interoperability of EA capabilities with other Navwar disciplines. FY 2014 Plans: Support program reviews, EMD source selection, testing, integration, security and performance certification activities. Continue coordinating interoperability of EA capabilities with other Navwar disciplines.		0.000	4.538	6.100
Title: Platform Integration & Performance Certification Description: Technical and operational modernization impact analysis for MGUE Service lead platform integration. Development of DoD Policy, Strategy & Resource Requirements for MGUE Performance Certification. FY 2013 Plans: Conduct external Navwar testing in support of Service lead platform integration. Support Army migration from handheld to embedded GPS. Develop policy and requirements related to performance certification. FY 2014 Plans: Continue lead platform integration planning and testing. Develop test vectors in support of performance certification.		0.000	2.800	5.240
Title: Information Assurance Description: Develop, implement and maintain GPS Security Certification programs. FY 2013 Plans:		0.000	4.100	5.400

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C. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014
Conduct Modernized Security Evaluations for Selective Availability Anti-Spoofing Module (SAASM) receivers. Conduct pilot program with Modernized User Equipment (MUE) and develop requirements to security certify MUE and MGUE receivers. Develop process to security certify MGUE receivers. Achieve security handling for MUE delivered cards at a reduced classification level. FY 2014 Plans: Conduct Modernized Security Evaluations for SAASM receivers. Continue MGUE security certification planning activities to include security certification for other than lead platforms, such as munitions and handhelds.											
Title: Program & Technical Support Description: Provide program and technical support for prime contract execution, testing, integration, security and performance certification. FY 2013 Plans: Provide support for execution for 3 MGUE contracts and 3 MUE contracts. Support MGUE CDRLs review, and provide engineering support for requirements development for handheld and common GPS receivers. Develop EMD Request for Proposal (RFP). Update Technical Requirements Document (TRD). Provide approaches for Increment 2 acceleration. FY 2014 Plans: Continue support for execution of 3 MGUE contracts. Continue support of MGUE CDRL review, MGUE EMD source selection support, and engineering support for requirements development for handheld and common GPS receivers. Develop requirements for munitions and handheld Form Factors in order to implement PNT Analysis of Alternatives (AoA) recommendations. Initiate selected course of action for MGUE Increment 2 per OSD direction.									0.000	25.059	31.693
Accomplishments/Planned Programs Subtotals									0.000	96.840	137.233
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 836730: Navstar GPS Space	2.008	2.031	2.061		2.061	2.093	3.661	13.907	16.193	2.245	44.199
• RDTE: BA07: PE 0305164F: NAVSTAR Global Positioning System (User Equipment) (SPACE)	125.935	29.621	0.000		0.000	0.000	0.000	0.000	0.000	0.000	155.556
Remarks											

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E. Acquisition Strategy The MGUE program has developed a comprehensive acquisition strategy to provide modernized GPS capabilities to US and Allied forces by: (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; (d) introducing the CGM to support long term vision and modernized capabilities for non-lead platform and unique applications providing a secure, common core GPS capability to a broader range of military applications; and (e) implementing a proactive, collaborative MGUE platform integration activity to mitigate risk and reduce cost for Enterprise modernization. The MGUE program awarded three sole source contracts for the Increment 1 Technology Development Phase effort. This effort will span contract award to PDR, including MGUE Increment 1 requirements and preliminary design development. There will be a down-select to two contractors for the EMD phase of the program which will develop aviation, ground, and CGM form factors to full-rate production. MGUE Increment 2 is in the Materiel Solutions Analysis phase.		
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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0305164F: NAVSTAR Global Positioning System (User Equipment) (SPACE)						PROJECT 643833: MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MGUE Increment 1 Technology Development (Rockwell)	C/CPIF	Rockwell Collins:Cedar Rapids, IA	0.000	0.000		17.781	Jan 2013	24.600	Dec 2013	-		24.600	86.986	129.367	
MGUE Increment 1 Technology Development (Raytheon)	C/CPIF	Raytheon:El Segundo, CA	0.000	0.000		17.781	Jan 2013	24.600	Dec 2013	-		24.600	86.986	129.367	
MGUE Increment 1 Technology Development (L3)	C/CPIF	L3:Anaheim, CA	0.000	0.000		17.781	Jan 2013	24.600	Dec 2013	-		24.600	86.986	129.367	
Advanced Technology	C/CPAF	Various:Various,	0.000	0.000		7.000	Apr 2013	15.000	Feb 2014	-		15.000	14.278	36.278	
Integration	C/CPAF	Various:Various,	0.000	0.000		0.800	Mar 2013	1.240	Jan 2014	-		1.240	69.000	71.040	
Performance Certification	C/CPAF	Various:Various,	0.000	0.000		2.000	Feb 2013	2.000	Feb 2014	-		2.000	27.000	31.000	
Information Assurance	C/CPAF	Various:Various,	0.000	0.000		4.100	Apr 2013	5.400	Jan 2014	-		5.400	26.100	35.600	
SE&I	C/CPAF	Variuos:Various,	0.000	0.000		4.538	Feb 2013	6.100	Dec 2013	-		6.100	26.500	37.138	
Subtotal			0.000	0.000		71.781		103.540		0.000		103.540	423.836	599.157	
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	Various	Various:Various,	0.000	0.000		0.000		2.000	Jan 2014	-		2.000	15.000	17.000	
Subtotal			0.000	0.000		0.000		2.000		0.000		2.000	15.000	17.000	

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Engineering Support (FFRDC)	Various	Aerospace:El Segundo, CA	0.000	0.000		17.223	Jan 2013	20.678	Dec 2013	-		20.678	86.178	124.079	
Program Support (FFRDC)	Various	MITRE:El Segundo, CA	0.000	0.000		7.836	Feb 2013	11.015	Dec 2013	-		11.015	43.599	62.450	
Subtotal			0.000	0.000		25.059		31.693		0.000		31.693	129.777	186.529	

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	96.840	137.233	0.000	137.233	568.613	802.686	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

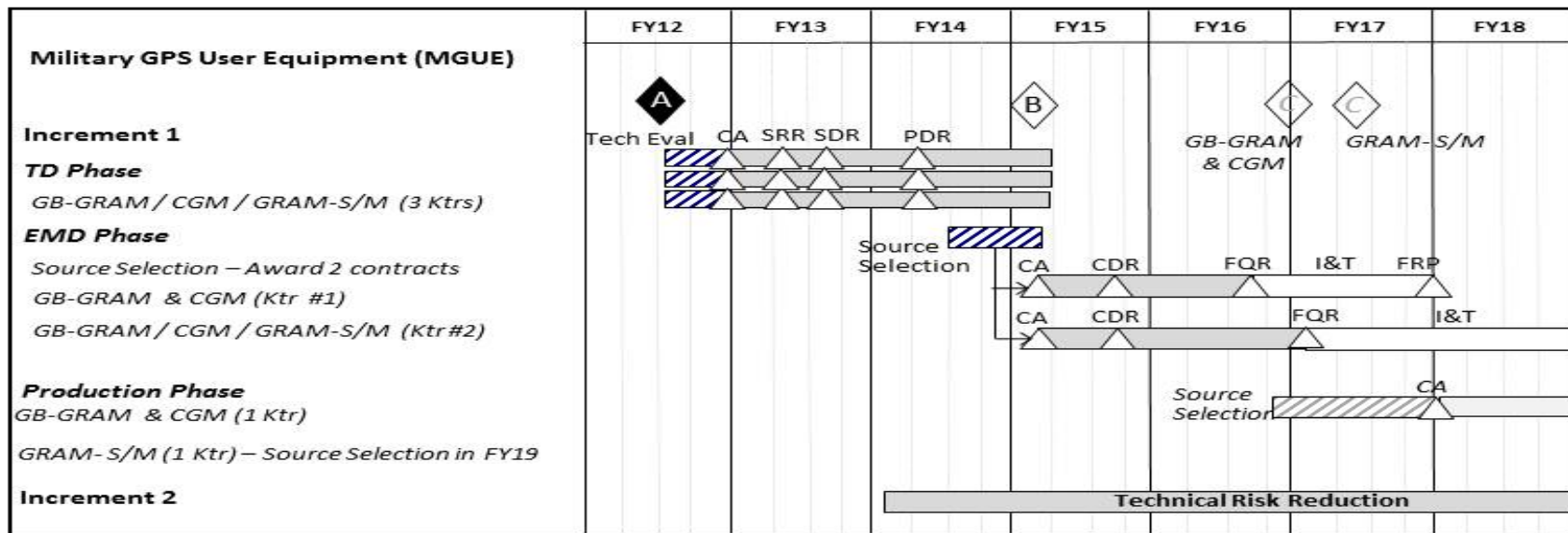
3600: Research, Development, Test & Evaluation, Air Force
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R-1 ITEM NOMENCLATURE

PE 0305164F: NAVSTAR Global Positioning System (User Equipment) (SPACE)

PROJECT

643833: MILITARY GLOBAL POSITIONING SYSTEM USER EQUIP



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MGUE Contract Award	4	2012	4	2012
System Requirements Review (SRR)	2	2013	2	2013
System Design Review (SDR)	3	2013	3	2013
Preliminary Design Review (PDR)	2	2014	2	2014