

UNCLASSIFIED

PE NUMBER: 0305165F
 PE TITLE: NAVSTAR GPS (Space)

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	174.530	176.721	120.931	92.626	57.192	35.939	36.221	36.959	Continuing	TBD
3030 NAVSTAR GPS (Space & Control)	174.530	176.721	120.931	92.626	57.192	35.939	36.221	36.959	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This Program Element (PE) funds Research and Development (R&D) for the Navstar Global Positioning System (GPS) Space and Control segments of the overall GPS program. It includes, but not limited to: satellite development, training simulators, Integrated Logistics Support (ILS) products, ground control segment development, procurement, and operation; sustaining engineering; space and ground segments upgrades; and R&D efforts to support the entire GPS system deployment. This PE funds R&D for modernization and future GPS systems including efforts to provide anti-jam capability through increased Military(M)-Code signal power.

Modification of GPS Block IIR-M is complete and the satellites are currently being launched. GPS Block IIF satellites are being modified to include a second and third civil signal (L2C and L5) and a new military signal (M-code).

Operational Control System (OCS) will deliver control segment capabilities to support Block IIF satellites as well as the existing constellation of Block IIA/IIR/IIR-M satellites.

This program is in Budget Activity 7 - Operational Systems Development because it supports operational systems.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	184.756	177.792	106.837	77.123
(U) Current PBR/President's Budget	174.530	176.721	120.931	92.626
(U) Total Adjustments	-10.226	-1.071		
(U) Congressional Program Reductions	-0.005	-0.400		
Congressional Rescissions		-0.671		
Congressional Increases				
Reprogrammings	-5.000			
SBIR/STTR Transfer	-5.221			

(U) Significant Program Changes:

FY06: -\$5.000M for higher Air Force priorities; +\$14.094M in FY08 and +\$15.503M in FY09 for OCS development and GPS Operations Center (GPSOC).

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 07 Operational System Development					PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)			PROJECT NUMBER AND TITLE 3030 NAVSTAR GPS (Space & Control)			
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total	
3030 NAVSTAR GPS (Space & Control)	174.530	176.721	120.931	92.626	57.192	35.939	36.221	36.959	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0			

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(U) B. Accomplishments/Planned Program (\$ in Millions)

	FY 2006	FY 2007	FY 2008	FY 2009
(U) Continue system engineering, spectrum/frequency management and program operations, to include Systems Engineering and Integration	6.960	1.892	0.800	0.800
(U) Continue IIF satellite development	28.713	20.900	0.100	0.000
(U) Continue Operational Control Segment (OCS) development/modernization	138.857	150.229	113.331	88.026
(U) Continue Space Operations Center Integration	0.000	3.700	6.700	3.800
(U) Total Cost	174.530	176.721	120.931	92.626

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2006</u> Actual	<u>FY 2007</u> Estimate	<u>FY 2008</u> Estimate	<u>FY 2009</u> Estimate	<u>FY 2010</u> Estimate	<u>FY 2011</u> Estimate	<u>FY 2012</u> Estimate	<u>FY 2013</u> Estimate	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) AF RDT&E										
(U) Related RDT&E (PE 0603421F, BA-4/R-41, Project 644993 - GPS Block	89.556	313.401	587.226	868.852	839.868	755.699	642.740	569.885	Continuing	TBD

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(U) **C. Other Program Funding Summary (\$ in Millions)**

III)											
(U) Other APPN											
(U) Operations and Maintenance (PE 0305165F, BA 1 - Operating Forces, SAG 13D)	60.722	74.620	80.075	83.472	92.584	98.920	100.710	102.787	Continuing	TBD	
(U) Missile Procurement (PE 0305165F, BA 5 - Space and Other Support, P-22, 23)	336.845	84.585	210.261	127.392	169.626	501.608	726.313	790.504	Continuing	TBD	
(U) Other Procurement (PE 0305165F, BP 83 - Electronics and Telecommunications Equipment, WSC 836790, P-67, and WSC 836730; BP 86 - Spares & Repair Parts, WSC 86190A, P-62)	13.370	12.218	11.680	25.456	10.947	18.468	28.008	20.756	Continuing	TBD	

(U) **D. Acquisition Strategy**

GPS OCS upgrade was competitively awarded to a single contractor (Lockheed Martin) in July 1995. Block IIF satellite and IIF ground systems development contract was competitively awarded to a single contractor (Boeing) in April 1996. The Single Prime Initiative (SPI) consolidated these efforts and was added to the Boeing IIF contract (with Lockheed Martin as a subcontractor) on 1 Oct 1999. GPS Modernization efforts for the Block IIR were awarded sole source to Lockheed Martin under a new contract in August 2000. Modernization efforts for Block IIF were added to the existing contract with Boeing as Engineering Change Proposals (ECPs).

The Air Force is unable to deliver full M-Code capability within the operational control segment (OCS) by FY11. This OCS slip created a significant overlap with the planned GPS III next generation control segment (OCX) development causing the potential for duplicative development efforts and near simultaneous fielding of the full M-code capability and new civil signals (L2C and L5) on both the OCX and OCS contracts. The existing OCS contract was modified to descope the delivery of full M-code capability. The delivery of full capability and new civil signals will be implemented in OCX (funded in the GPS III PE 0603421F).

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Exhibit R-3, RDT&E Project Cost Analysis

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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> <u>Prior to FY</u> <u>2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Cost</u>	<u>FY 2006</u> <u>Award</u> <u>Date</u>	<u>FY 2007</u> <u>Cost</u>	<u>FY 2007</u> <u>Award</u> <u>Date</u>	<u>FY 2008</u> <u>Cost</u>	<u>FY 2008</u> <u>Award</u> <u>Date</u>	<u>FY 2009</u> <u>Cost</u>	<u>FY 2009</u> <u>Award</u> <u>Date</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>	<u>Target</u> <u>Value of</u> <u>Contract</u>
<u>(U) Product Development</u>														
Applied Research Labs	MIPR	Various	3.649	0.000		0.000		0.000		0.000		0.000	3.649	
OCS Development & IIF Modernization (F0470196C0025)	FPAF/CP AF/CPFF	Boeing, Seal Beach, CA	1,026.885	138.857	Jan-06	150.229	Nov-06	113.331	Nov-07	88.026	Nov-08	Continuing	TBD	1,944.179
IIF Development (F047019C0025)	FPAF/CP AF/CPFF	Boeing, Seal Beach, CA	26.100	28.713	Jan-06	20.900	Nov-06	0.100	Nov-07	0.000		0.000	75.813	77.600
IIR Modernization Development (F0470100C0006)	CPIF	Lockheed Martin, King of Prussia, PA	74.786	0.000		0.000		0.000		0.000		0.000	74.786	74.786
GPS III Modernization (F0470101C0008)	FFP	Lockheed Martin, King of Prussia, PA	15.767	0.000		0.000		0.000		0.000		0.000	15.767	TBD
GPS III Modernization (F0470101C0010)	FFP	Boeing, Seal Beach, CA	16.000	0.000		0.000		0.000		0.000		0.000	16.000	
Control Segment Support	MIPR/PO	Various Gov't agencies	8.119	0.000		0.000		0.000		0.000		Continuing	TBD	TBD
EELV Mission Unique Svcs & Clock Development	MIPR/Other SPO Contracts	NRL & Contractors	26.477	0.000		0.000		0.000		0.000		Continuing	TBD	TBD
Stewardship	MIPR	Various	13.333	0.000		0.000		0.000		0.000		Continuing	TBD	TBD
Accuracy Improvement Initiative (AII)	FPA/CPAF/CPFF	Boeing, Seal Beach, CA	10.000	0.000		0.000		0.000		0.000		0.000	10.000	
Subtotal Product Development			1,221.116	167.570		171.129		113.431		88.026		Continuing	TBD	TBD
Remarks:														
<u>(U) Support</u>														
System Engineering/Support	Various	FFRDC (Aerospace/Mitre), SETA	40.579	1.955	Jan-06	4.800	Nov-06	6.700	Nov-07	3.800	Nov-08	Continuing	TBD	TBD
GPS Modernization Tech Spt	Various	Various	43.249	0.000		0.000		0.000		0.000		0.000	43.249	
Miscellaneous	Various	Various	3.231	0.000		0.000		0.000		0.000		0.000	3.231	
Subtotal Support			87.059	1.955		4.800		6.700		3.800		Continuing	TBD	TBD
Remarks:														
<u>(U) Test & Evaluation</u>														
Flex Power Testing (F0470100C0006)	FPAF/CP	Lockheed	4.588	0.000		0.000		0.000		0.000		Continuing	TBD	TBD

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Exhibit R-3 (PE 0305165F)

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BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE			
07 Operational System Development			0305165F NAVSTAR GPS (Space)				3030 NAVSTAR GPS (Space & Control)			
	AF/CPFF	Martin, King of Prussia, PA & various gov't activities								
Subtotal Test & Evaluation			4.588	0.000	0.000	0.000	0.000	Continuing	TBD	TBD
Remarks:										
(U) <u>Management</u>										
Management Support	Various SETA & FFRDCs	FFRDC (Aerospace) & SETA	14.942	5.005	0.792	0.800	0.800	Continuing	TBD	TBD
Subtotal Management			14.942	5.005	0.792	0.800	0.800	Continuing	TBD	TBD
Remarks:										
(U) Total Cost			1,327.705	174.530	176.721	120.931	92.626	Continuing	TBD	TBD

Exhibit R-4a, RDT&E Schedule Detail

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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)	PROJECT NUMBER AND TITLE 3030 NAVSTAR GPS (Space & Control)
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(U) <u>Schedule Profile</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Legacy Accuracy Improvement Initiative (AII) capability complete	1Q			
(U) Launch, Anomaly resolution & Disposal Operations (LADO) release 1 delivery to site		1Q		
(U) SAASM development Formal Qualification Test (FQT)		3Q		
(U) GPS Block IIF development complete		3Q		
(U) IIF flight software development complete		4Q		
(U) SAASM system test complete			1Q	
(U) LADO release 2 complete			2Q	
(U) SAASM capability complete				2Q