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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002															
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)				PROJECT 3030															
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost														
3030 NAVSTAR GPS (Space & Control)	241,163	178,655	324,098	174,163	99,415	106,183	80,093	Continuing	TBD														
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0														
<p>(U) <u>A. Mission Description</u> This program element funds Research and Development for the NAVSTAR Global Positioning System (GPS) Space and Control segments of the overall GPS program. This includes, but is not limited to: satellite development, training simulators, development of an Integrated Mission Operation Support Center (IMOSC), Integrated Logistics Support (ILS) products, and 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 Program Element (PE) funds the Research and Development (R&D) for modernization and future GPS systems including efforts to provide anti-jam capability through increased M-Code signal power, as soon as practical.</p> <p>GPS Block IIF satellites and up to 10 Block IIR satellites will be modified to include a second civil signal and new military signal. Block IIF satellites will also include a third civil signal (L5). A new GPS Block III program was initiated after new start approval in August 2000 to incorporate a higher power military signal to provide enhanced anti-jam capability, the second and third civil signals, and the new military signal.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$21,192</td> <td>Continued system engineering and spectrum/frequency management</td> </tr> <tr> <td>(U) \$6,529</td> <td>Continued IIF satellite development</td> </tr> <tr> <td>(U) \$121,050</td> <td>Continued GPS Modernization for Space (for all IIF and IIR satellites and future GPS III satellites)</td> </tr> <tr> <td>(U) \$67,975</td> <td>Continued Operational Control Segment (OCS) development</td> </tr> <tr> <td>(U) \$19,717</td> <td>Continued OCS modernization</td> </tr> <tr> <td>(U) \$4,700</td> <td>Continued GPS stewardship</td> </tr> <tr> <td>(U) \$241,163</td> <td>Total</td> </tr> </table>										(U) \$21,192	Continued system engineering and spectrum/frequency management	(U) \$6,529	Continued IIF satellite development	(U) \$121,050	Continued GPS Modernization for Space (for all IIF and IIR satellites and future GPS III satellites)	(U) \$67,975	Continued Operational Control Segment (OCS) development	(U) \$19,717	Continued OCS modernization	(U) \$4,700	Continued GPS stewardship	(U) \$241,163	Total
(U) \$21,192	Continued system engineering and spectrum/frequency management																						
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(U) \$241,163	Total																						
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
07 - Operational System Development	0305165F NAVSTAR GPS (Space)	3030		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2002 (\$ in Thousands)</u>				
(U) \$8,000	Continue system engineering and spectrum/frequency management			
(U) \$5,036	Continue IIF satellite development			
(U) \$63,278	Continue GPS Modernization for Space (for IIF and IIR satellites; GPS III funds transferred to PE 0603421F)			
(U) \$59,545	Continue OCS development			
(U) \$42,796	Continue OCS modernization			
(U) \$178,655	Total			
GPS Stewardship transferred to PE 0603421F				
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$8,864	Continue system engineering and spectrum/frequency management			
(U) \$4,173	Continue IIF satellite development			
(U) \$128,557	Continue GPS Modernization for Space (for IIF and IIR satellites) and enhanced anti-jam capabilities			
(U) \$60,404	Continue OCS development			
(U) \$122,100	Continue OCS modernization			
(U) \$324,098	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is in Budget Activity 7 - Operational Systems Development because it is a post-Milestone III program.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	258,952	186,459	206,960	TBD
(U) Appropriated Value	260,980	180,459		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,821	-1,804		
b. Small Business Innovative Research	-11,626			
c. Omnibus or Other Above Threshold Reprogram	-190			
d. Below Threshold Reprogram	-5,613			
e. Rescissions	-567			
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)				PROJECT 3030				
(U) C. Program Change Summary (\$ in Thousands) Continued												
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2002 PBR					117,138						
(U)	Current Budget Submit/FY 2003 PBR			241,163	178,655	324,098			TBD			
(U)	<u>Significant Program Changes:</u> In FY02, PE 030165F, Space & Control funds for GPS III were transferred to PE 0603421F. \$117,138K added in FY03 for GPS Modernization and OCS disconnects as well as pursuing enhanced anti-jam capabilities..											
(U) D. Other Program Funding Summary (\$ in Thousands)												
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E											
(U)	RDT&E (PE 0603421F, BA-4/R-38, Project 644993 - GPS Block III)			0	76,960	100,217	183,767	186,960	211,877	203,641	Continuing	TBD
(U)	Other APPN											
(U)	Operations and Maintenance (PE 0305165F, BA 1 - Operating Forces, SAG 13D)			47,251	49,365	60,009	60,155	60,585	62,138	65,594	Continuing	TBD
(U)	Missile Procurement (PE 0305165F, BA 5 - Space and Other Support, P-21, 22)			159,643	171,175	209,470	238,783	439,271	397,287	419,969	Continuing	TBD
(U)	Other Procurement (PE 0305165F, BP 83 - Electronics and Telecommunications Equipment, WSC 6790, P-68, and WSC 6730.) Related RDT&E			15,750	7,934	13,534	8,763	9,841	14,091	26,014	Continuing	TBD
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)			PROJECT 3030		
(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
PE 0305164F, GPS User Equipment									
PE 0305913F, Nuclear Detonation Detection System (NDS)									
(U) E. 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 99. GPS Modernization efforts for the Block IIR were awarded sole source to Lockheed Martin under a new contract in August 2000. Efforts for Block IIF are being added to the existing contract with Boeing as ECPs.									
(U) F. Schedule Profile									
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4
(U)	Enhanced IIA IMOSC Development begins	*							
(U)	Enhanced IIA IMOSC Development complete				*				
(U)	IIF IMOSC Development Begins						X		
(U)	Launch/Early Orbit (L/EO) Consolidation Development begins			*					
(U)	Continue OCS Architectural Implementation:								
(U)	Phase 3/4 delivery			*					
(U)	Phase 3/4 Installed in GPS Support Facility (GSF)				*				
(U)	Version 5 Development Begins	*							
(U)	Version 5.0 (COTS upgrade) delivery to site						X		
(U)	M-MSRE development begins							X	
(U)	Version 5.2 (IIF baseline) delivery to site								X
(U)	Version 6 Development Begins							X	
(U)	GPS Modernization Studies complete	*							
(U)	GPS Modernization Long Lead Production Block IIR Begins	*							
(U)	GPS Block IIR CDR				*				
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(U) <u>F. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) GPS Block IIR Production Start				*										
(U) GPS Block IIR development complete									X					
(U) GPS Overarching Integrated Product Team (OIPT)			*											
(U) GPS Block IIF PDR					*									
(U) GPS Defense Acquisition Executive Program Review						X								
(U) GPS Modernization Long Lead Production Block IIF begins						X								
(U) GPS Block IIF CDR								X						
(U) GPS III Architecture Study Contracts Awarded	*													
* = Completed, X = Scheduled														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305165F NAVSTAR GPS (Space)				3030			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering and spectrum frequency management					21,192		8,000		8,864	
(U)	GPS Block IIF satellite development					6,529		5,036		4,173	
(U)	GPS Modernization for Space					121,050		63,278		128,557	
(U)	OCS development					67,975		59,545		60,404	
(U)	OCS modernization					19,717		42,796		122,100	
(U)	GPS Stewardship					4,700		0		0	
(U)	Total					241,163		178,655		324,098	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Applied Research Labs	MIPR	Mar 97			3,049	300	300	300	Continuing	TBD
	Boeing (C0025)	FPAF/CPAF/CPFF	Apr 96			274,363	132,954	168,455	313,891	Continuing	TBD
	Lockheed-Martin Missiles and Space (C0006)		Aug 00			11,000	46,000	900	0	0	57,900
	GPS III Modernization Lockheed-Martin (C0008)	FFP	Dec 00	15,767	15,767	0	15,767	0	0	0	15,767
	GPS III Modernization Boeing (C0010)	FFP	Dec 00	16,000	16,000	0	16,000	0	0	0	16,000
	NRL	MIPR	Various			8,780	4,650	1,500	1,000	Continuing	TBD
	GPS Modernization Stewardship	Various	Various			2,974	4,300	0	0	0	7,274
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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305165F NAVSTAR GPS (Space)				3030		
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
System Engineering/Support	Various	Various	N/A	N/A	28,600	901	935	960	Continuing	TBD
GPS Modernization Tech Spt		Various			16,393	20,291	6,565	7,947	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	3,231	0	0	0	0	3,231
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					300,166	219,971	171,155	315,191	TBD	TBD
Subtotal Support and Management					48,224	21,192	7,500	8,907	TBD	TBD
Subtotal Test and Evaluation										
Total Project					348,390	241,163	178,655	324,098	TBD	TBD