

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	PROJECT 4777
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4777 E-4B Aircraft Modernization	18,596	46,688	44,377	53,164	23,584	287	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY02, \$20M of Defense Emergency Response Funding (DERF) was provided to the 'National Airborne Command Post' under the general category of Improved Command and Control. The E-4B weapon system (PE: 0302015F) received \$18.2M of these funds, which were used toward the following projects: Senior Leadership Communication System (SLCS) study (\$0.3M) and procurement (\$5.0M), Defense Message System (DMS) (\$0.4M), Global Air Traffic Management Phase II (GATM II) (\$3.8M), and E-4B depot maintenance work (\$8.7M). The remaining \$1.8M was provided to the NAOC Ground Command Communications Network (PE: 0302052F). All the E-4B related DERF funds were spent in support of operation HOMELAND DEFENSE. This funding is not reflected in the FY02 program total.

(U) A. Mission Description

The E-4B National Airborne Operations Center (NAOC) modernization program upgrades the fleet of four highly modified Boeing 747-200 aircraft to add new capability and improve reliability in support of the two primary missions for this weapon system. The E-4B NAOC fleet satisfies the military requirement to provide a survivable operations center as an alternate to the National Military Command Center (NMCC) located in the Pentagon. The E-4B NAOC fleet also satisfies the military need for an airborne operations center with communications capabilities that will permit senior national leadership to monitor and control military and civil national assets during all phases of national conflict or disaster. Developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the operations center related facilities, equipment, and communications necessary for the E-4B fleet to execute its primary mission as an alternate NMCC.

Modifications currently underway or planned for accomplishment under this project in the next four to five years include:

Modification Block 1 (Mod Blk 1): A group designator for modifications being started and completed together on the same aircraft. The RDT&E elements of Mod Blk 1 include Block 5A and GATM II (note: actual Mod Blk 1 also includes SLCS, but SLCS does not require RDT&E funding).

Block 5A is an Audio Infrastructure Upgrade (AIU) that affects the primary mission internal audio distribution and recording system. It replaces obsolete 1960s era equipment with digital technology that corrects a major sustainment issue associated with out-dated analog voice data distribution and recording equipment.

GATM II is the second part of a 3-phased implementation of Global Access, Navigation, and Safety/Global Air Traffic Management (GATM) modifications to

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<p>(U) <u>A. Mission Description Continued</u> permit unencumbered access to international airspace and to maintain the level of E-4B flight safety consistent with civil standards that become effective in CY05.</p> <p>Senior Leaders Communication System (SLCS) Completion of FY02 DERF funded studies during FY02 concluded that the technical solution to the SLCS requirements (provide 'office in the sky' capability for senior leaders that includes commercial Direct Broadcast Service, and video teleconferencing capability, plus access to Defense Information System Network and Public Switch Network for voice, video and data exchange on and off the airplane (external e-mail and Internet access)) will not require research and development. The SLCS modification will be funded with Aircraft Procurement modification funds.</p> <p>Block 5B: A primary mission equipment modification that will: Greatly improve the ability to store, manipulate, distribute and view information related to the aircraft's primary mission. These enhancements will increase the accuracy, timeliness, and throughput of tactical and strategic information presented to embarked military decision-making commanders; Reduce internal airborne noise in senior leaders conferencing and briefing areas.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">(U)</td> <td style="width: 15%;">\$0</td> <td>Accomplishment/Planned Program</td> </tr> <tr> <td>(U)</td> <td>\$1,671</td> <td>Purchase GATM II Prototype Kit</td> </tr> <tr> <td>(U)</td> <td>\$15,625</td> <td>System Engineering (Block 5A/GATM II)</td> </tr> <tr> <td>(U)</td> <td>\$1,300</td> <td>Contractor Technical and Program Management Support</td> </tr> <tr> <td>(U)</td> <td>\$18,596</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">(U)</td> <td style="width: 15%;">\$0</td> <td>Accomplishment/Planned Program</td> </tr> <tr> <td>(U)</td> <td>\$38,241</td> <td>Blk 5A (AIU) System Engineering, Prototye Kit</td> </tr> <tr> <td>(U)</td> <td>\$197</td> <td>Blk 5B - Data Concept Exploration</td> </tr> <tr> <td>(U)</td> <td>\$6,750</td> <td>GATM II System Engineering and Prototype Kit</td> </tr> <tr> <td>(U)</td> <td>\$0</td> <td>SLCS System Engineering, Prototype Kit and Install</td> </tr> <tr> <td>(U)</td> <td>\$1,500</td> <td>Contractor Technical and Program Management Support</td> </tr> <tr> <td>(U)</td> <td>\$46,688</td> <td>Total</td> </tr> </table>			(U)	\$0	Accomplishment/Planned Program	(U)	\$1,671	Purchase GATM II Prototype Kit	(U)	\$15,625	System Engineering (Block 5A/GATM II)	(U)	\$1,300	Contractor Technical and Program Management Support	(U)	\$18,596	Total	(U)	\$0	Accomplishment/Planned Program	(U)	\$38,241	Blk 5A (AIU) System Engineering, Prototye Kit	(U)	\$197	Blk 5B - Data Concept Exploration	(U)	\$6,750	GATM II System Engineering and Prototype Kit	(U)	\$0	SLCS System Engineering, Prototype Kit and Install	(U)	\$1,500	Contractor Technical and Program Management Support	(U)	\$46,688	Total
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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$32,712 Mod Blk 1 - AIU prototype installation (formerly called Block 5A)</p> <p>(U) \$8,446 Mod Blk 1 - GATM II prototype installation</p> <p>(U) \$1,119 Block 5B - Data concept exploration</p> <p>(U) \$2,100 Contractor Technical and Program Management Support</p> <p>(U) \$44,377 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>Because the E-4B program develops modifications for a fielded system, it is categorized as a budget activity 7 - Operational System Development.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">23,126</td> <td style="text-align: right;">47,867</td> <td style="text-align: right;">64,094</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">23,359</td> <td style="text-align: right;">47,867</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: right;">-233</td> <td style="text-align: right;">-706</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-638</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-473</td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-3,801</td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td style="text-align: right;">-91</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">-19,717</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">18,596</td> <td style="text-align: right;">46,688</td> <td style="text-align: right;">44,377</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>The E-4B program was restructured during FY02 due to FY02 cost overruns, the reprogramming of FY02 funds to higher priority Air Force programs, and projected cost increases in future year efforts. This restructuring delays some program segments. Initial Operational Capability (IOC) for Mod Block 1 is FY05. IOC of GATM III has been delayed pending successful execution of Mod Block 1. Block 5B begins with exploration of a data distribution and viewing concept. These program adjustments have been made to preserve both schedule and content of the highest priority E-4B programs (Mod Blk 1).</p>					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	23,126	47,867	64,094	TBD	(U) Appropriated Value	23,359	47,867			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-233	-706			b. Small Business Innovative Research	-638				c. Omnibus or Other Above Threshold Reprogram		-473			d. Below Threshold Reprogram	-3,801				e. Rescissions	-91				(U) Adjustments to Budget Years Since FY 2003 PBR			-19,717		(U) Current Budget Submit/FY 2004 PBR	18,596	46,688	44,377	TBD
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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER				PROJECT 4777		
(U) D. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) Aircraft Procurement AF, Budget Activity 5, Weapon System Code E00400, PE 0302015F; Mod 4381 (AIU--formerly Blk 5A);4381B (Blk 5B); Mod 9709 (GATM Phase II)	0	0	32,004	21,783	52,644	62,755	22,496	0	Continuing	Continuing	
(U) E. Acquisition Strategy											
A mod block structure has been established which includes Block 5A (AIU), GATM II and SLCS (note: SLCS doesn't require RDT&E but will be part of Mod Blk 1 install). System engineering, design, and prototype installation is being done under a Cost Plus Incentive Fee (CPIF) contract with Boeing - Wichita. Installations are in conjunction with Program Depot Maintenance (PDM) at the contractor's facility.											
(U) F. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) Mod Block 1											
(U) Complete Systems Engineering									X		
(U) Initiate Purchase Prototype Hardware				*							
(U) Start Prototype Install									X		
(U) Complete Prototype Install											X
(U) Conduct OT&E /IOC 1QFY05											
(U) Block 5B											
(U) Begin Data Concept Exploration								X			
Note: * indicates completed action											
Project 4777				Page 4 of 6 Pages				Exhibit R-2 (PE 0302015F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	PROJECT 4777
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Project Engineering/Install Cost	6,522		41,158
(U) System Engineering & Integration	1,442	35,170	
(U) Prototype Hardware Purchases	9,332	9,821	
(U) Block 5B Concept Exploration		197	1,119
(U) Contractor Technical / Program Management Support	1,300	1,500	2,100
(U) Total	18,596	46,688	44,377

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Boeing	CPAF/T&M	Feb 97	TBD	TBD		17,296			Continuing	TBD
Boeing - Wichita	CPIF	Jan 03					45,188	42,277	Continuing	TBD
<u>Support and Management Organizations</u>										
TRW	T & M	Oct 98	N/A	N/A	0	998	1,061	1,658	Continuing	TBD
DISA	MIPR	Various	TBD	TBD	0	125	276	245	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
605 FT	Project Order	N/A	TBD	TBD	0	177	163	197	Continuing	TBD

(U) **Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0302015F E-4B NATIONAL AIRBORNE OPERATIONS CENTER	PROJECT 4777
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(U) Government Furnished Property Continued:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					17,296	45,188	42,277	TBD	TBD
Subtotal Support and Management				0	1,123	1,337	1,903	TBD	TBD
Subtotal Test and Evaluation				0	177	163	197	TBD	TBD
Total Project				0	18,596	46,688	44,377	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303110F Defense Satellite Communications System					PROJECT 2638		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2638	Defense Satellite Communications Sys	3,006	2,016	0	0	0	0	0	0	0	621,016
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> Defense Satellite Communications System (DSCS) is the backbone of the Government's satellite communications system, providing both secure voice and high data rate transmissions in the Super High Frequency band. DSCS provides unique and vital national security communications for global command and control, crisis management, intelligence and early warning data relay, treaty monitoring and surveillance information, and diplomatic traffic. The communications relayed through DSCS support the President, Secretary of Defense, combat forces of all Services, Defense Information System Network, Diplomatic Telecommunications Service, White House Communications Agency, and Air Force Satellite Control Network.</p> <p>The DSCS Service Life Enhancement Program (SLEP) includes additional modifications that increase the last four (B8, B11, A3, and B6) satellites' capacity to tactical users by more than 200%, and implements the DoD Space Architect's recommendation. The first two satellites with SLEP mods are currently operational, the last two, A3 and B6, launch in FY03.</p> <p>The last two DSCS III satellites will launch in Feb 03 and Jul 03 on the Evolved Expendable Launch Vehicle (EELV) and require DSCS launch vehicle interface modifications and additional launch loads analyses.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$894 System Program Office Operations - Provided Contractor Support - Provided Mission Support</p> <p>(U) \$265 Basic DSCS Program - Conducted programmatic tradeoffs and analyses</p> <p>(U) \$1,847 -Continued DSCS/EELV Integration development, transitioning the last two satellites to launch on EELV</p> <p>(U) \$3,006 Total</p>											
Project 2638			Page 1 of 5 Pages				Exhibit R-2 (PE 0303110F)				

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303110F Defense Satellite Communications System	PROJECT 2638
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishment/Planned Program
(U) \$1,096	System Program Office Operations
	- Provide Contractor Support
	- Provide Mission Support
(U) \$200	Basic DSCS Program
	- Conduct programmatic tradeoff and analyses
(U) \$720	- Continue DSCS/EELV integration development, transition the last satellite to launch on EELV
(U) \$2,016	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishment/Planned Program
(U) \$0	No Activity
(U) \$0	Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 7, Operational System Development, since DSCS is a fully operational satellite constellation with replenishment satellites awaiting launch, and associated support systems.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	3,856	2,046		621,896
(U) Appropriated Value	3,895	2,046		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-55	-21		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-9		
d. Below Threshold Reprogram	-834			
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR				

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(U) C. Program Change Summary (\$ in Thousands) Continued

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Current Budget Submit/FY 2004 PBR	3,006	2,016		621,016

(U) Significant Program Changes:
None.

(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to Complete</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>Estimate</u>		
(U) AF RDT&E										
(U) PE 0603854F, BPAC 644870, CCS-C, BA-04, Line R-49	16,543	11,836	36,992	20,350	8,292	7,013	5,704	6,347	0	122,624
(U) Other APPN										
(U) OPAF, PE 0303600F, CCS-C		5,543	8,109	2,135	289	0	0	0	0	16,076
(U) MPAF, PE 0303110F, DSCS, BA-05, Line P-026	27,982	20,513	12,479	6,640	0	0	0	0	0	1,584,793

(U) E. Acquisition Strategy

All satellites have been acquired and two satellites remain to be launched. Enhancements to satellites not launched accomplished through sole source contract awards.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Launch DSCS A3/IABS 7						X						
(U) Launch DSCS B6/IABS 10									X			
(U) EELV Integration Completion									X			

* = completed event; x = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0303110F Defense Satellite Communications System			2638				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	System Program Office Operations					894		1,096			
(U)	Basic DSCS Program					265		200			
(U)	Evolved Expendable Launch Vehicle Integration					1,847		720			
(U)	Total					3,006		2,016			
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Lockheed Martin	CPAF/AF	Oct 84/Mar 96	434,629	434,629	434,629				0	434,629
	Miscellaneous	CPAF	Various	N/A	N/A	147,397	2,112	1,296	0	0	150,805
	<u>Support and Management Organizations</u>										
	Aerospace Corp	PO	Various	N/A	N/A	12,900				0	12,900
	Miscellaneous	Various	Various	N/A	N/A	21,068	894	720	0	0	22,682
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										
Project 2638						Page 4 of 5 Pages	Exhibit R-3 (PE 0303110F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303110F Defense Satellite Communications System	PROJECT 2638
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(U) Government Furnished Property Continued:

Support and Management Property

None

Test and Evaluation Property

None

	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	582,026	2,112	1,296	0	0	585,434
Subtotal Support and Management	33,968	894	720	0	0	35,582
Subtotal Test and Evaluation						
Total Project	615,994	3,006	2,016	0	0	621,016

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303112F AIR FORCE COMMUNICATIONS					PROJECT 4884	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4884	Public Key Infrastructure Implementation	29,481	0	0	0	0	0	0	0	0	29,481
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> PUBLIC KEY INFRASTRUCTURE (PKI):</p> <p>PKI encompasses the techniques and standards used to manage certificates and public and private keys in order to authenticate the validity of each party involved in an electronic transaction. Department of Defense (DoD) PKI was mandated by the Deputy Secretary of Defense on 8 Aug 97 and the Services were further directed to use the capabilities in a 6 May 99 memo. PKI supports the overall Defense-in-Depth strategy for information assurance capabilities -- user identification, non-repudiation, digital signatures and encryption for government electronic business and network transactions -- protecting/securing all network information.</p> <p>Funds were used to support initial implementation and integration of PKI user smart card , public key directory storage of the PKI certificates, PKI registration for both users and servers, and initial training on NIPRNET and SIPRNET. In particular, the RDT&E funds were applied to the Smart Card/Common Access Card (CAC) to integrate and test with the current Defense Enrollment Reporting System (DEERS)/Real-Time Automated Personnel Identification Systems (RAPIDS) ID and registration system. Additionally, the funds were used to prototype and test replicating the DoD Public Key directory to each Air Force base-level directory structure. Furthermore, the funds were used to perform technology integration and testing of new hardware CAC token into the user desktop environment. Finally, a small sum of the funds were allotted to the AF SPO for program support activities.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$27,700 Completed Initial implementation of Class 3 Public Key Infrastructure which included the initial implementation of registration activities (estimated target of 700,000 certificates to users) and the initial rollout of Common Access Cards to AF users; support of initial reader and middleware implementation at bases that will be issued the Common Access Card; initial support of Public Key Infrastructure use of AF Directory Services for certificate status checking; evaluation of new technologies that will support increased use of PKI Class 3 and Target Class 4 on the NIPRNET and SIPRNET</p> <p>(U) \$816 Completed testing support of Public Key Infrastructure Certificate Directories and other infrastructure components</p> <p>(U) \$965 Completed program and management control (SPO activities)</p>											
Project 4884			Page 1 of 4 Pages				Exhibit R-2 (PE 0303112F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
07 - Operational System Development	0303112F AIR FORCE COMMUNICATIONS	4884			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands) Continued</u>					
(U) \$29,481	Total				
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$0	Accomplishments/Planned Program				
(U) \$0	No Activity				
(U) \$0	Total				
(U) <u>FY 2004 (\$ in Thousands)</u>					
(U) \$0	Accomplishments/Planned Program				
(U) \$0	No Activity				
(U) \$0	Total				
(U) <u>B. Budget Activity Justification</u>					
This is a budget activity 7, Operational System Development because it supports Air Force requirements to prototype, integrate, and test Public Key Infrastructure components including registration and usage hardware/software/middle-ware, Common Access Cards, and directories on Air Force computer systems and networks.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget		31,274	0	0	
(U) Appropriated Value		31,828			
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions		-554			
b. Small Business Innovative Research		-870			
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram		-779			
e. Rescissions		-144			
(U) Adjustments to Budget Years Since FY 2003 PBR					
(U) Current Budget Submit/FY 2004 PBR		29,481		0	29,481
(U) <u>Significant Program Changes:</u>					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003						
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303112F AIR FORCE COMMUNICATIONS				PROJECT 4884					
(U) D. Other Program Funding Summary (\$ in Thousands)													
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
(U) E. Acquisition Strategy													
Electronic Systems Center (ESC) Information Assurance Product Area Directorate (PAD) manages the AF PKI Program. All major contractors within this program element have been awarded contracts after full and open competition or through existing government contracting vehicles. Contracts are executed via GSA, Standard AF contract (through the Standard Systems Group, AL), and Information Technology Services Program (ITSP) to support engineering effort and equipment for the integration of Common Access Card tokens and prototyping of AF base level directories; and initial PKI Class 3 and Target Class 4 certificate issuance, registration, and infrastructure.													
(U) F. Schedule Profile													
		<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>							
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Completed prototyping support for PKI Interface/Integration of Tokens					*								
(U) Completed testing support of PKI Certificate Directories					*								
(U) Completed Initial Registration Infrastructure					*								
X denotes planned event													
Project 4884													
Page 3 of 4 Pages													
Exhibit R-2 (PE 0303112F)													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303112F AIR FORCE COMMUNICATIONS			4884		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Prototyping support for Interface/Integration of registration Common Access Card tokens, peripheral readers with Air Force-wide computer and communication architectures					27,700		0		0
(U)	Testing support of PKI Certificate Directories and other infrastructure components					816		0		0
(U)	Program and management control (SPO activities)					965		0		0
(U)	Total					29,481		0		0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
	Prototyping Support	PR	Dec 00			27,700	0	0	0	27,700
<u>Support and Management Organizations</u>										
	ESC/DIW SPO Activities	PR	Dec 00			816	0	0	0	816
<u>Test and Evaluation Organizations</u>										
	Test Support	PR	Dec 00		0	965	0	0	0	965
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
	Subtotal Product Development					27,700	0	0	0	27,700
	Subtotal Support and Management					816	0	0	0	816
	Subtotal Test and Evaluation					0	965	0	0	965
	Total Project					0	29,481	0	0	29,481

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303131F Minimum Essential Emergency Communications Network (MEECN)

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	5,536	2,396	10,716	37,620	49,377	37,585	24,422	14,883	Continuing	TBD
2832 MEECN System Improvements	1,407	1,138	1,406	1,446	1,459	1,487	1,509	1,529	Continuing	TBD
4521 DIRECT	3,757	871	285	286	299	303	307	311	Continuing	TBD
4610 Minuteman MEECN Program (MMP)	372	387	285	5,852	20,480	30,986	17,745	8,100	Continuing	TBD
5047 Ground Element MEECN System (GEMS)	0	0	8,740	30,036	27,139	4,809	4,861	4,943	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2004, Project 2832 was renamed to MEECN System Improvements to better depict on-going efforts. In FY04, Project 5047, GEMS, is a new start effort.

(U) A. Mission Description

Minimum Essential Emergency Communications Network (MEECN) systems provide assured communications connectivity between the President and the strategic deterrent forces.

Currently these systems include:

- The Modified Miniature Receive Terminal (MMRT), that provides High Data Rate (HIDAR) capability for E-4B and E-6B aircraft,
- Defense Improved Emergency Message Automated Transmission System (IEMATS) Replacement Command and Control Terminals (DIRECT),
- Minuteman MEECN Program (MMP) - is the combination of Minuteman ICBM Launch Control Center (LCC) VLF/LF upgrade efforts with Minuteman ICBM Extremely High Frequency (EHF) band communications capability efforts.
- Ground Element MEECN System (GEMS) - a secure, survivable inter-site, intra-site and mobile EHF communications to bomber, tanker and other communication facilities with strategic responsibilities.

Future capability will include Advanced EHF (AEHF) on MMP and Ground Element MEECN Systems (GEMS).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
**0303131F Minimum Essential Emergency
Communications Network (MEECN)**

(U) **B. Budget Activity Justification**

This program is in Budget Activity 07 - Operational System Development, because it supports work on currently fielded operating weapon systems.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	5,923	2,423	2,011	TBD
(U) Appropriated Value	5,982	2,423		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-59	-27		
b. Small Business Innovative Research	-360			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions	-27			
(U) Adjustments to Budget Years Since FY 2003 PBR			8,705	
(U) Current Budget Submit/FY 2004 PBR	5,536	2,396	10,716	TBD

(U) **Significant Program Changes:**

FY04 increase due to the GEMS program starting 1 year earlier.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)				PROJECT 2832	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2832 MEECN System Improvements	1,407	1,138	1,406	1,446	1,459	1,487	1,509	1,529	Continuing	TBD
<p>In FY2004, Project 2832 was renamed MEECN System Improvements to better depict on-going efforts.</p> <p>(U) <u>A. Mission Description</u></p> <p>This project's effort support the design and development of the Modified Miniature Receive Terminal (MMRT) program. The program modifies the Miniature Receive Terminal (MRT) to provide High Data Rate (HIDAR) capability on the E-4B, National Airborne Operations Center (NAOC) and the E-6B, Take Charge and Move Out (TACAMO) aircraft. The MMRT Very Low Frequency/Low Frequency receivers are fully interoperable satisfying both Air Force and Navy requirements.</p> <p>This project also funds the airborne segment of the Communications Evaluation Program (CEP) for technical analysis of the currently fielded Command, Control, and Communication (C3) systems. CEP is a key factor in determining Assured MEECN Interoperability (AMI). The program implements a detailed test program for Emergency Action Message (EAM) insertion and reception. It conducts multiple evaluations on a continuing year-round basis. Following test data collection, analysis is performed to ensure the strategic communication systems meet JCS-directed platform connectivity requirements. The purpose of the program is to test the strategic C3 system to establish a quantitative system-wide performance baseline, conduct trend analysis, integrate new systems into the strategic C3 system, identify system deficiencies, recommend solutions and verify the effectiveness of corrective actions, and recommend and develop procedures in order to improve overall system performance.</p> <p>Trade-off analysis is also performed to identify benefits and drawbacks of maintaining current systems. Studies are conducted to monitor communications system technology and potential integration complexities into current and future capabilities. Studies are conducted to assess the use of current communications terminals capability to support future requirements. The MEECN architecture is currently evaluating/planning modernization of the VLF/LF cryptographic capability, application of using DIRECT in mobile configurations (E-4, E-6 and Mobile Consolidated Command Center (MCCC)) and application of HIDAR VLF/LF in other strategic communications platforms.</p> <p>Budget Activity Justification: This program is in Budget Activity 07 - Operational System Development, because it supports work on currently fielded operating weapon systems.</p>										
Project 2832			Page 3 of 21 Pages				Exhibit R-2A (PE 0303131F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	PROJECT 2832
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,407 Continued Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$1,407 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,138 Continue Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$1,138 Total

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,406 Continue Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$1,406 Total

(U) **B. Project Change Summary**

Reduced analysis of currently fielded strategic nuclear command and control systems..

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) Aircraft Procurement - AF, (MEECN, PE 0303131F, BA-05, P-57)	6,995	4,655	0	0	0	0			0	36,897

(U) **D. Acquisition Strategy**

Modified Miniature Receive Terminal (MMRT) Program. Contract awarded in FY96 for the E-4B, National Airborne Operations Center (NAOC); E-6B, Take Charge and Move Out (TACAMO). CEP is an annual test and evaluation of currently fielded command and control systems.

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BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT					
07 - Operational System Development	0303131F Minimum Essential Emergency Communications Network (MEECN)						2832					
(U) E. Schedule Profile												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) E-6B Initial Operational Capability (IOC)	*											
(U) E-4B IOC			*									
(U) E-4B Full Operational Capability (FOC)										X		
(U) CEP Study and Analysis - Quarterly Report(s)				*	X	X	X	X	X	X	X	X
* Indicates completed task												
X Indicates planned task												
Project 2832										Page 5 of 21 Pages		
										Exhibit R-2A (PE 0303131F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	PROJECT 2832
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Program Management Administration (PMA)	200	200	200
(U) Johns Hopkins University: CEP Studies and Analysis	1,207	938	1,206
(U) Total	1,407	1,138	1,406

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Rockwell	SS/CPAF	Aug 92	13,500	13,500	13,500				0	13,500
Rockwell	SS/CPAF	Jul 96	49,238	49,238	49,338				0	49,338
TRW	SS/CPAF	Mar 99	16,093	16,093	16,093				0	16,093
JHU-APL (SPAWAR SysCen)	MIPR	Annual	N/A	N/A	4,826	1,207	938	1,206	Continuing	TBD
<u>Support and Management Organizations</u>										
SE/TA [SRC, ASEC, MCR ATT, SAFTAS]	Various	As Req'd.	2,976	2,976	2,976	0	0		0	2,976
MITRE	LOE	As Req'd.	131	131	131	0	0		0	131
PMA	Various	Annual	N/A	N/A	1,378	200	200	200	Continuing	TBD
ALCs	MIPR	As Req'd.	355	355	355				0	355
<u>Test and Evaluation Organizations</u>										
NavAir Warfare Center	MIPR	As Req'd.	5,554	5,554	5,554				0	5,554
AFOTEC	MIPR	As Req'd.	204	204	204				0	204

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 2832		
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u>	<u>Award or</u> <u>Obligation</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A				342					342
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				84,099	1,207	938	1,206	TBD	TBD
Subtotal Support and Management				4,840	200	200	200	TBD	TBD
Subtotal Test and Evaluation				5,758				0	5,758
Total Project				94,697	1,407	1,138	1,406	TBD	TBD

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)					PROJECT 4521		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4521	DIRECT		3,757	871	285	286	299	303	307	311	Continuing	TBD
<p>(U) <u>A. Mission Description</u></p> <p>The Defense Improved Emergency Message Automatic Transmission System (IEMATS) Replacement Command and Control Terminal (DIRECT) is a Strategic Nuclear Command and Control (C2) system directly supporting the President, Secretary of Defense, and the Chairman of the Joint Chiefs of Staff (CJCS). DIRECT has formally replaced IEMATS, and ensures continued connectivity for the President and SecDef to build, transmit, receive, acknowledge, relay, and process Emergency Action Messages (EAMs) via the seven unified command centers to allow the CJCS and warfighters to remain responsive to the directives of the President and Secretary of Defense. This program will acquire system hardware for the seven unified command centers and a hardware facility. DIRECT is certified to Top Secret-Single Integrated Operational Plan (SIOP) messaging and reached Full Operational Capability (FOC) on 15 Feb 02. DIRECT will be compatible with the Defense Message System (DMS) or the directed DMS alternative as well as interface with all current and future EAM distribution communication systems. DIRECT will also expand, through DIRECT- to- Nova/Strategic Command and Control System (SACCS) interface, the User base for EAM dissemination due to the Automatic Digital Network (AUTODIN).</p> <p>This project also funds the operational Command and Control Terminals segment of the Communications Evaluation Program (CEP) for technical analysis of the currently fielded Command, Control, and Communication (C3) systems. CEP is a key factor in determining Assured MEECN Interoperability (AMI). The program implements a detailed test program for EAM insertion and reception. It conducts multiple evaluations on a continual year-round basis. Following test data collection, analysis is performed to ensure the strategic communication systems meet JCS-directed platform connectivity requirements. The purpose of the program is to test the strategic C3 system to establish a quantitative system-wide performance baseline, conduct trend analysis, integrate new systems into the strategic C3 system, identify system deficiencies, recommend solutions and verify the effectiveness of corrective actions, and recommend and develop procedures in order to improve overall system performance. Trade-off analysis is also performed to identify benefits and drawbacks of maintaining current systems. Studies are conducted to monitor communication system technology and potential integration complexities into current and future capabilities.</p> <p>Budget Activity Justification: This program is in Budget Activity 07 - Operational System Development, because it supports work on currently fielded operating weapon systems.</p>												
Project 4521			Page 8 of 21 Pages					Exhibit R-2A (PE 0303131F)				

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BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
0303131F Minimum Essential Emergency
Communications Network (MEECN)

PROJECT
4521

(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$607 Continued EMD to develop interface between DIRECT and DMS.
- (U) \$3,000 Development of MEECN Emergency Action Message (EAM) Hybrid Solution.
- (U) \$150 Continued Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$3,757 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$693 Continue EMD to develop interface between DIRECT and DMS.
- (U) \$178 Continue Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$871 Total

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$195 Continue EMD to develop interface between Direct and DMS
- (U) \$90 Continue Communications Evaluation Program (CEP) Studies and Analysis.
- (U) \$285 Total

(U) **B. Project Change Summary**

No significant changes.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) Other Procurement - AF, (MEECN, PE 0303131F, BA-03, P-50)	2,002	1,061	0	0	0	0			0	22,975

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)					PROJECT 4521																																																				
<p>(U) <u>D. Acquisition Strategy</u> A SS/CPAF contract for EMD was awarded to GTE Government Systems (now General Dynamics-Communications Systems), Needham, MA on 12 Jul 96.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> <th colspan="4" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) CEP Study and Analysis - Quartlyl Reports</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td colspan="12"> * Indicates completed task X Indicates planned task </td> </tr> </tbody> </table>													<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) CEP Study and Analysis - Quartlyl Reports	*	*	*	*	X	X	X	X	X	X	X	X	* Indicates completed task X Indicates planned task											
	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>																																																					
	1	2	3	4	1	2	3	4	1	2	3	4																																																		
(U) CEP Study and Analysis - Quartlyl Reports	*	*	*	*	X	X	X	X	X	X	X	X																																																		
* Indicates completed task X Indicates planned task																																																														
Project 4521				Page 10 of 21 Pages				Exhibit R-2A (PE 0303131F)																																																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303131F Minimum Essential Emergency Communications Network (MEECN)			4521		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Prime Contract					3,364		569		195
(U)	Program Management Administration (PMA)					113		59		
(U)	SE/TA					130		65		
(U)	CEP/Studies and Analysis					150		178		90
(U)	Total					3,757		871		285
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
GTE	SS/CPAF	Jul 96	N/A	N/A	29,185	3,364	569	195	Continuing	TBD
National Security Agency (NSA)	MIPR	Annually	2,300	2,300	2,300				0	2,300
JHU-APL	LOE	Annual	N/A	N/A	249	150	178	90	Continuing	TBD
<u>Support and Management Organizations</u>										
SE/TA [ASEC, ABACUS, MCR, ATT, SAFTAS]	LOE	As Req'd.	N/A	N/A	2,942	130	65			3,137
MITRE	LOE	As Req'd.	N/A	N/A	2,668	0	0			2,668
PMA	Various	Annual	N/A	N/A	1,346	113	59			1,518
<u>Test and Evaluation Organizations</u>										
Various	Various	As Req'd.	N/A	500	471	0	0		0	471

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 4521		
(U) <u>Government Furnished Property:</u>									
<u>Item</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
Subtotal Product Development				31,734	3,514	747	285	TBD	TBD
Subtotal Support and Management				6,956	243	124			7,323
Subtotal Test and Evaluation				471	0	0		0	471
Total Project				39,161	3,757	871	285	TBD	TBD

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	PROJECT 4610
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4610 Minuteman MEECN Program (MMP)	372	387	285	5,852	20,480	30,986	17,745	8,100	Continuing	TBD

In FY 2003, Project 4610 was renamed to Minuteman MEECN Program (MMP) (formerly MEECN EHF). This action did not change program content .

(U) A. Mission Description

This project combines Minuteman ICBM Launch Control Center (LCC) Very Low Frequency/Low Frequency (VLF/LF) efforts with Minuteman ICBM Extremely High Frequency (EHF) band communications capability efforts. This MEECN project will provide reliable, secure, and survivable communications in the Extremely High Frequency (EHF) band. Specifically, this effort is currently focused on replacing the satellite-based, ground communication links with Minuteman ICBM forces. It supplants the ICBM Super High Frequency (SHF) Satellite Terminal (ISST) receipt, providing force direction/execution, and the Ultra High Frequency (UHF) report-back links. ISST relies upon the Single Channel Transponder (SCT) package aboard the Defense Satellite Communications System (DSCS). The SCT will not be flown on the DSCS after 2003. Extending the use of SCT aboard DSCS is not practical. The UHF links depend upon the Air Force Satellite Communications (AFSATCOM) packages hosted aboard the Fleet Satellite Communications (FLTSATCOM) satellites. FLTSATCOM satellites are past their life expectancy. MEECN EHF is required to meet redundancy standards established by national security directives.

This project also funds the operational ICBM Launch Control Center (LCCs) segment of the Communications Evaluation Program (CEP) for technical analysis of the currently fielded strategic Command, Control, and Communications (C3) systems. CEP is a key factor in determining Assured MEECN Interoperability (AMI). The program implements a detailed test program for Emergency Action Message (EAM) insertion and reception. It conducts multiple evaluations on continual year-round basis. Following test data collection, analysis is performed to ensure the strategic communications systems meet JCS-directed platform connectivity requirements. The purpose of the program is to test the strategic C3 system to establish a quantitative system-wide performance baseline, conduct trend analysis, integrate new systems into the strategic C3 system, identify system deficiencies, recommend solutions and verify the effectiveness of corrective actions, recommend and develop procedures in order to improve overall system performance. Trade-off analysis is also performed to identify benefits and drawbacks of maintaining current systems. Studies are conducted to monitor communications system technology and potential integration complexities into current and future capabilities.

Future capability will include upgrading MMP system to be compatible with Advanced EHF (AEHF).

Budget Activity Justification:

This program is in Budget Activity 07 - Operational System Development, because it supports work on currently fielded operating weapon systems.

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BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
0303131F Minimum Essential Emergency
Communications Network (MEECN)

PROJECT
4610

(U) **A. Mission Description Continued**

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 Accomplishment/Planned Program
 (U) \$372 Continued Communications Evaluation Program (CEP) Studies and Analysis.
 (U) \$372 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishment/Planned Program
 (U) \$387 MMP ECPs/AEHF Concept Development Studies
 (U) \$387 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishment/Planned Program
 (U) \$285 Continue AEHF Concept Development Studies
 (U) \$285 Total

(U) **B. Project Change Summary**

No significant changes.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) MPAF, Missile Modifications (MEECN, PE 0303131F, BA 03, P-011)	53,300	33,037	33,287	15,846	2,893	0	0	0	0	154,709

(U) **D. Acquisition Strategy**

The ICBM Prime Integrating Contract (through OO-ALC, Hill AFB, UT) is being used as a contracting vehicle for the Minuteman MEECN Program (MMP).

(U) **E. Schedule Profile**

FY 2002

FY 2003

FY 2004

Project 4610

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
07 - Operational System Development				0303131F Minimum Essential Emergency Communications Network (MEECN)				4610				
(U) E. Schedule Profile Continued												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AEHF Concept Development Studies										X		
(U) MMP Milestone III Decision			*									
(U) Procurement Option 2						X						
(U) Start Missile Alert Facility Top-side Work							X					
(U) MMP IOC												X
* Indicates completed task												
X Indicates planned task												
Project 4610				Page 15 of 21 Pages				Exhibit R-2A (PE 0303131F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 4610			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Prime Contract					372					
(U)	Program Management Administration (PMA)										
(U)	SE/TA										
(U)	MITRE										
(U)	JHU-APL							387		285	
(U)	Total					372		387		285	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	TRW	SS/CPAF	Mar 99	45,812	45,812	45,812				0	45,812
	JHU-APL	LOE	Annual	N/A	N/A	455	372	387	285	Continuing	TBD
<u>Support and Management Organizations</u>											
	SE/TA [SRC, MCR, ATT, SAFTAS]	LOE	As Req'd.	N/A	N/A	826					826
	MITRE	LOE	As Req'd.	N/A	N/A	695					695
	PMA	Various	Annual	N/A	N/A	847					847
<u>Test and Evaluation Organizations</u>											
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Project 4610										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 4610	
(U) Government Furnished Property Continued:								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
N/A								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development				46,267	372	387	285	TBD
Subtotal Support and Management				2,368				
Subtotal Test and Evaluation								
Total Project				48,635	372	387	285	TBD

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)	PROJECT 5047
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5047 Ground Element MEECN System (GEMS)	0	0	8,740	30,036	27,139	4,809	4,861	4,943	Continuing	TBD

In FY2004, Project 5047, GEMS, is a new start effort.

(U) **A. Mission Description**
 Nuclear Command and Control Technical Performance Criteria require that communication facilities with strategic responsibilities receive emergency action messages (EAMs) and function as part of the strategic force. Ground Element MEECN Systems (GEMS) will be comprised of MILSTAR EHF/AEHF, VLF/LF, UHF and Aircrew Alerting components and will provide secure, survivable inter-site, intra-site and mobile communications to bomber, tanker, reconnaissance and other communications facilities with strategic responsibilities. GEMS terminals will be developed and fielded to replace both mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals. GEMS will also replace the Aircraft Alerting Communications Electromagnetic Pulse System/Electromagnetic Pulse Hardened Dispersal Communications (AACE/EHDC) systems.

Budget Activity Justification:
 This program is in Budget Activity 07 - Operational System Development, because it supports work on currently fielded operating weapon systems.

- (U) FY 2002 (\$ in Thousands)
- (U) \$0 No Activity
- (U) \$0 Total

- (U) FY 2003 (\$ in Thousands)
- (U) \$0 No Activity
- (U) \$0 Total

- (U) FY 2004 (\$ in Thousands)
- (U) \$3,100 Begin Interface Development
- (U) \$600 Aircrew Alerting Component Hardening and Integration
- (U) \$5,040 Communication Systems Definition/Prototyping
- (U) \$8,740 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																																						
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)				PROJECT 5047																																																																																					
<p>(U) <u>B. Project Change Summary</u> FY 04 funds were added in order to begin GEMS 1 year earlier.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>FY 2008</u></th> <th style="width:10%;"><u>FY 2009</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other APPN Other Procurement - AF, (MEECN, PE0303131F, BA-03, P-050)</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">37,427</td> <td style="text-align: right;">120,953</td> <td style="text-align: right;">76,400</td> <td style="text-align: right;">21,600</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> Award of Systems Demonstration and Development (SDD) contract following full and open competition.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th colspan="4" style="width:40%;"><u>FY 2002</u></th> <th colspan="4" style="width:40%;"><u>FY 2003</u></th> <th colspan="3" style="width:40%;"><u>FY 2004</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Initiate SDD on Interface Development</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td> </tr> <tr> <td>(U) Initiate System Design and Development on Communications Terminal Prot</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td> </tr> </tbody> </table>											<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) Other APPN Other Procurement - AF, (MEECN, PE0303131F, BA-03, P-050)					37,427	120,953	76,400	21,600	Continuing	TBD		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Initiate SDD on Interface Development										X			(U) Initiate System Design and Development on Communications Terminal Prot										X		
	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																			
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Project 5047			Page 19 of 21 Pages				Exhibit R-2A (PE 0303131F)																																																																																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303131F Minimum Essential Emergency Communications Network (MEECN)			PROJECT 5047			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>	
(U)	Prime Contract									7,765	
(U)	ITSP									650	
(U)	PMA (SPO Support)									325	
(U)	Total									8,740	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	TBD	TBD	1QFY04	TBD	TBD			7,765	Continuing	TBD	
	<u>Support and Management Organizations</u>										
	ITSP		As Req'd.	N/A	N/A			650	Continuing	TBD	
	PMA		Annual	N/A	N/A			325	Continuing	TBD	
	<u>Test and Evaluation Organizations</u>										
(U) <u>Government Furnished Property:</u>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	N/A										
	<u>Support and Management Property</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
07 - Operational System Development		February 2003				
BUDGET ACTIVITY		PROJECT				
07 - Operational System Development		5047				
PE NUMBER AND TITLE		PROJECT				
0303131F Minimum Essential Emergency Communications Network (MEECN)		5047				
(U) <u>Government Furnished Property Continued:</u>						
<u>Test and Evaluation Property</u>						
N/A						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				7,765	TBD	TBD
Subtotal Support and Management				975	TBD	TBD
Subtotal Test and Evaluation						
Total Project				8,740	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303140F Information Systems Security Program

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21,675	24,325	37,667	87,831	117,756	225,098	383,740	267,090	Continuing	TBD
4579 Information Warfare	5,704	11,457	2,826	5,031	5,746	6,127	6,199	5,058	Continuing	TBD
4861 Cryptologic 2000	0	0	4,180	3,284	3,311	3,540	3,599	3,629	Continuing	TBD
4871 Information Operations Technology	1,477	2,965	758	502	815	991	9,022	9,337	Continuing	TBD
5100 Cryptographic Modernization	0	0	23,533	72,461	102,792	207,797	357,983	241,867	Continuing	TBD
7820 Computer Security RDT&E: Firestarter	14,494	9,903	6,370	6,553	5,092	6,643	6,937	7,199	0	0
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This program provides the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance (C4ISR) and Weapon Systems from Information Warfare (IW) attacks; and to recover from those attacks. Primarily, the project does research and development of information protection tools and transitions them to operational systems. The 33140 Program Element consists of five complimentary BPACS. The Information Warfare BPAC provides the acquisition community and operational warfighters the ability to manage their own risks relative to mission, task, threat, and vulnerability information; and to mitigate IW risks based on rank-ordered countermeasure recommendations. The Info Ops (IO) Technology BPAC concentrates on transitioning state-of-the-art IO capabilities to the warfighter through demonstrations of those technologies and rapid prototyping of warfighter tools. It also funds the IW MIssion Area Team (MAT), the Information Warfare Solution Analysis Intergrated Product Team (IPT) (previously known as the IW Technology PLanning IPT [IW TPIPT]), and the Panther Den program office. Two development efforts are in the Cryptologic area. One effort will allow the AF to migrate from the current legacy manual system of generation, distribution, accounting, and material management of AF cryptographic keying materials to the new Electronic Key Management System being acquired by NSA. The second cryptologic effort will be part of a larger AF Crypto Modernization Program to upgrade algorithms, microchips, and hardware. The computer security project directs the R&D of information protection technology and tools to defend C4ISR systems, with emphasis on computer and network systems security, damage assessment and recovery, and multi-level systems security. It provides access control, integrity, assured services and meets warfighter's requirements.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303140F Information Systems Security Program

(U) **B. Budget Activity Justification**

This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	20,053	9,353	9,460	TBD
(U) Appropriated Value	20,536	24,753		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-483	-166		
b. Small Business Innovative Research	-561			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	2,289			
e. Rescissions	-106	-262		
(U) Adjustments to Budget Years Since FY 2003 PBR			28,207	
(U) Current Budget Submit/FY 2004 PBR	21,675	24,325	37,667	TBD

(U) **Significant Program Changes:**

FY03: Congressional \$3.8M for continued management of the Cyber Lighthouse Security Technology Program; \$3.5M add for management of the Center for Information Assurance (IA) Security; \$1.0M add for Enabling Technologies; \$5.1M add for continued management of the WISE; and \$2.0M for the IO Technology Database Project.

FY04: Cryptographic Modernization, established for a DoD downward-directed program to replace upgrade, and modernize its aging cryptographic algorithms, chips, and crypto devices.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 4579	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4579	Information Warfare	5,704	11,457	2,826	5,031	5,746	6,127	6,199	5,058	Continuing	TBD
<p>(U) A. Mission Description</p> <p>Builds information warfare solutions for AF Command and Control (C2), Intelligence, Surveillance, and Reconnaissance (ISR) systems. The project provides the acquisition community and operational warfighters the ability to manage the IW risks to their missions and operational tasks based on asset threat and vulnerability information. Provides decision-makers with countermeasure recommendations, rank-ordered based on operational utility and relative cost. Looking across all assessments conducted on AF systems, the project also provides the USAF a unique system-of-systems perspective for managing shared IW risks.</p> <p>IW Solutions Analysis Integrated Product Team (IW SA IPT) supports modernization planning for IW Mission Area and Solutions Analysis Processes. Continuously identifies and evaluates commercial and Government inventory of available products that can be used to meet IW mission deficiencies. Information Warfare Architectures provide architectural solutions that result in systems designed with IW fundamentals. Provides Government laboratories and private industry guidance on new technologies needed for the next 10 to 25 years.</p> <p>Demonstrate and migrate Attack Tree Methodology to AF networks to provide improved situational awareness during cyber attacks. The first phase of this project is to incorporate the knowledge of AF networks and national level cyber vulnerabilities databases and perform an Attack Tree analysis of the networks. The analysis will provide AF network administrators attack paths into their networks. The second phase of this project is to monitor real time cyber attack information and provide intelligent assessments of the type of the cyber attack and end goals for the cyber attack.</p> <p>Common Access Card (CAC) concept exploration and prototyping of wireless technologies: Studies, analysis, and prototype development related to integrating the DOD CAC and emerging wireless infrastructure technologies in support of information assurance. Reports and prototypes developed will be used for risk reduction and technology migration. Technologies to be studied will include wireless infrastructure components such as Blackberry, Bluetooth and wireless local area networks.</p> <p>(Technical work done under Cyberlighthouse. Received JEFX02 money for demonstrations.) Continue Integrated SATCOM Interference Detection and Response (ISIDR) concept exploration, prototyping, and demonstration. During JEFX02, ISIDR successfully demonstrated that this technology can quickly identify when unprotected C4ISR SATCOM jamming occurs and characterize the jamming signal. Due to this success, further investigations and demonstrations will be conducted with inputs from JEFX02 participants. Results from this investigation will provide the warfighter with C4ISR situational awareness of SATCOM jamming. Investigate unprotected C4ISR SATCOM jammer excision technology leading to prototype demonstration. This technology is being investigated in concert with the SATCOM</p>											
Project 4579			Page 3 of 26 Pages				Exhibit R-2A (PE 0303140F)				

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February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303140F Information Systems Security Program

PROJECT

4579

(U) **A. Mission Description Continued**

interference detection and characterization. Successful demonstration of this technology and subsequent developments could provide the warfighter unfettered C4ISR unprotected SATCOM during real world operations.

Cyber Lighthouse: Lighthouse (a Congressional Plus-up) is a cyber security research and development program managed by the Air Forces HQ Electronic Systems Center (ESC). The work under Lighthouse is performed by three Federally Funded Research and Development Centers - MITRE (Mass.), Carnegie Mellon University's Software Engineering Institute (PA), and MIT/Lincoln Lab (Mass.). The program identifies information assurance (IA) gaps in systems, develops and validates new technological countermeasures, and seeks to rapidly transition these solutions to operational users. It is designed to address those research needs that are not currently being addressed by other sources. In some cases, it simply involves investigating the feasibility of a cyber technology. In others, the effort will actually include the development and prototype of a system that will resolve a known vulnerability.

The Cyber Lighthouse effort has included such initiatives as the Integrated Satellite Communications Interference Detection and Response System (ISIDR), which was successfully tested in cooperation with Spiral 3 of the Joint Expeditionary Force Experiment (JEFX 02). The ISIDR prototype demonstrated the ability to rapidly detect and characterize interference on unprotected SATCOM links. These links are used to provide network connectivity (SIPRNET, NIPRNET, and JWICS), Intel Surveillance and Reconnaissance (ISR) connectivity (Predator, Global Hawk and U-2), and Beyond Line of Sight air picture connectivity to Air Operations Centers (AOCs). On a separate Lighthouse effort, research is being performed to aid in identifying a solution for a demonstrated Global Positioning System timing vulnerability. Under a new FY 03 Lighthouse effort, an Automated Incident Reporting System referred to as AirCERT is to be developed. AirCERT will be designed to collect, exchange, and analyze security event data from across large distributed networks to create a better view of the cyber threats facing a given organization and the Internet as a whole. There are currently more than eight separate cyber security research initiatives currently under way under the Cyber Lighthouse Program

(U) **FY 2002 (\$ in Thousands)**

(U)	\$0	Accomplishment/Planned Program
(U)	\$2,500	Managed Cyber Lighthouse Security Technology Development Program (Congressional Add)
(U)	\$1,000	Managed Enabling technologies for Info Assurance (IA) (Congressional Add)
(U)	\$798	Continued exportable VA/RM process and toolset development -- Phase 2, Develop next generation VA/RM prototype
(U)	\$300	Continued exportable VA/RM process and toolset development -- Phase 3, Start performing VA/RM assessments
(U)	\$120	Continued to establish and support existing infrastructure: Intelligence support, metrics/architectures
(U)	\$531	Continued IW SA IPT activities, analyses, database support
(U)	\$131	Continued to integrate cross-program assessments and solution development
(U)	\$324	Initiated/completed development of TVC database
(U)	\$5,704	Total

Project 4579

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Exhibit R-2A (PE 0303140F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		4579
PE NUMBER AND TITLE		
0303140F Information Systems Security Program		
(U) A. Mission Description Continued		
(U) FY 2003 (\$ in Thousands)		
(U) \$0	Accomplishment/Planned Program	
(U) \$3,800	Manage Cyber Lighthouse Security Technology Development Program (Congressional Add)	
(U) \$1,000	Manage Enabling technologies for Info Assurance (IA) (Congressional Add)	
(U) \$3,500	Manage the Center for Information Assurance (IA) Security (Congressional Add)	
(U) \$440	Continue exportable VA/RM process and toolset development -- Phase 2, Develop next generation VA/RM prototype; and Phase 3, Start performing VA/RM assessments	
(U) \$205	Continue to establish and support existing infrastructure: Intelligence support, metrics/architectures	
(U) \$400	Continue IW SA IPT activities, analyses, database support	
(U) \$400	Continue to integrate cross-program assessments and solution development	
(U) \$856	Initiate Common Access Card (CAC) concept exploration and prototyping of wireless technologies (transferred this year from PE 303112F, Air Force Communications)	
(U) \$856	Migrate Attack Tree Methodology for eMASS (transferred this year from this PE, BPAC 7820, Computer Security RDT&E: Firestarter)(eMASS previously known as DITSCAP)	
(U) \$11,457	Total	
(U) FY 2004 (\$ in Thousands)		
(U) \$0	Accomplishment/Planned Program	
(U) \$856	Continue exportable VA/RM process and toolset development -- Phase 2, Develop next generation VA/RM prototype; and Phase 3, Start performing VA/RM assessments	
(U) \$806	Continue to establish and support existing infrastructure: Intelligence support, metrics/architectures	
(U) \$91	Continue IW SA IPT activities, analyses, database support	
(U) \$293	Continue to integrate cross-program assessments and solution development	
(U) \$780	Continue Common Access Card (CAC) concept exploration and prototyping of wireless technologies (transferred this year from PE 303112F, Air Force Communications)	
(U) \$2,826	Total	
(U) B. Project Change Summary		
In FY02, \$585K was added in error to BPAC 674871. The \$585K was spread across all of the projects.		
Project 4579	Page 5 of 26 Pages	Exhibit R-2A (PE 0303140F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE **February 2003**

BUDGET ACTIVITY **07 - Operational System Development** PE NUMBER AND TITLE **0303140F Information Systems Security Program** PROJECT **4579**

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN none										

(U) **D. Acquisition Strategy**

All major contracts within this Program Element are awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Manage Cyber Lighthouse Program (Congressional Add)	*			*				X				
(U) Manage Enabling technologies for IA (Congressional Add)	*			*				X				
(U) Manage the Center for IA Security (Congressional Add)					*			X				
(U) Continue exportable VA/RM process & toolset development -- Phases 2&3												
(U) Continue to integrate cross program assessments & solution devel												
(U) Continue IW SA IPT activities, analysis, database support												
(U) Initiate/Continue CAC concept explor & prototype wireless								X				
(U) Initiate/Complete Migration & Deploy Attack Tree Method for eMASS								X		X		
(U) Initiated/Completed development of TVC database				*		*						

* Denotes Completed Events
X Denotes Planned Events

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 4861		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4861	Cryptologic 2000	0	0	4,180	3,284	3,311	3,540	3,599	3,629	Continuing	TBD
<p>NOTES: Prior to FY04 this project was in PE 33401, Communication Systems Security Program. The project number and title were identical to those used here.</p> <p>(U) <u>A. Mission Description</u> The Cryptologic 2000 Project consists of multiple developments supporting the Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA EKMS, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for AF C4I and weapon systems. AFEKMS replaces the existing physical distribution and management system providing cryptographic keying material for USAF Information Assurance. Information Assurance emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three-tier system structure in a hierarchical arrangement. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the 'wholesale' capability. Tier 2 installations comprise the distribution network and Tier 3 comprises the 'retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE).</p> <p>Acquisition includes Commercial Off-The-Shelf (COTS) computers and software, contractor-developed application software, and Government Furnished Equipment (GFE) and software such as NSA's Local COMSEC Management Software (LCMS). The USAF-developed application software is necessary to provide a common framework for specific functions of unique key management systems such as the F-22, Advanced EHF COMSEC/TRANSEC System (ACTS), Joint Strike Fighter (JSF), and other current and future programs. Further, unique key fill requirements of EICE for AF applications such as ARC-210, Fighter Data Link, Airborne Integrated Terminal Group and Multi-Band Multi-Mode Radio, and other current and future programs are also supported by AFEKMS developments. The UASs developed by the AFEKMS SPO improve the LCMS user interface, integrate multiple independent UASs into a single commonly supported package, and moderate unique UASs running on the same platform when integration is not possible. They also allow automation of manual operator processes in order to save manpower, reduce required training, and improve mission effectiveness.</p> <p>Overall AFEKMS will improve protection of National Security-related information by enhancing confidentiality, integrity, and non-repudiation substantially over legacy key management systems. AFEKMS will greatly accelerate availability of key through electronic transmission vice shipping of materials, and will enhance mission responsiveness and flexibility. While much of the current AFEKMS level-of-effort is directed at enhancing current and developing systems, the ultimate aim is to provide a migration path to future functionality planned under NSA's Key Management Infrastructure (KMI) initiative. Such KMI functionality is expected to emerge about 2007.</p>											
Project 4861		Page 8 of 26 Pages					Exhibit R-2A (PE 0303140F)				

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							February 2003			
BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT			
07 - Operational System Development	0303140F Information Systems Security Program						4861			
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U) \$0	Accomplishment/Planned Program									
(U) \$0	Total									
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U) \$0	Accomplishment/Planned Program									
(U) \$0	Total									
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U) \$0	Accomplishment/Planned Program									
(U) \$1,159	Continue program office contract support of User Application Software (UAS) including architectural planning and migration to the Key Management Infrastructure									
(U) \$3,021	Continue End User Application Software Development: Common USA, Local Management Device (LMD/Data Management Device (DMD), KOV-21 (for F-22), and computer-based training									
(U) \$4,180	Total									
(U) <u>B. Project Change Summary</u>										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
None										
(U) <u>D. Acquisition Strategy</u>										
All major contracts within this Program Element are awarded after full and open competition.										
(U) <u>E. Schedule Profile</u>										
	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003					
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT					
07 - Operational System Development					0303140F Information Systems Security Program					4861					
(U) E. Schedule Profile Continued															
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>			
		1	2	3	4		1	2	3	4		1	2	3	4
(U) Cont. End User Appl. SW devel., Common UAS, LMD/DMD, KOV-21 integ, etc															
(U) Continue Program office contract support of the EKMS UAS for KMI															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT 4861			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Cont. End User Appl. SW devel., Common UAS, LMD/DMD, KOV-21 integ, etc					0		0		3,021	
(U)	Continue Program office contract support of the EKMS UAS for KMI					0		0		1,159	
(U)	Total					0		0		4,180	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	SAIC	BPA	May 98	N/A	N/A	0	0	0	1,077	Continuing	TBD
	Mitre	FFRDC	Nov 00	N/A	N/A	0	0	0	2,938	Continuing	TBD
	Windmill Int'l, Inc.	BPA	Nov 02	N/A	N/A	0	0		165	Continuing	TBD
<u>Support and Management Organizations</u>											
N/A											
<u>Test and Evaluation Organizations</u>											
N/A											
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
N/A											
<u>Test and Evaluation Property</u>											
N/A											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
07 - Operational System Development			0303140F Information Systems Security Program			4861
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
N/A						
Subtotal Product Development			0	0	0	4,180
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						
Total Project			0	0	0	4,180
N/A						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 4871	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4871 Information Operations Technology	1,477	2,965	758	502	815	991	9,022	9,337	Continuing	TBD	
<p>(U) <u>A. Mission Description</u></p> <p>(U) This program expedites Information Operations (IO) Technology transition from laboratory, industry, and academia to operational use via studies, rapid prototyping, and demonstrations.</p> <p>(U) The program office investigates and selects the highest potential IO technologies to meet specific shortfalls and deficiencies documented by major commands (MAJCOMS), unified commands, and IO agencies in Mission Area Plans (MAPs) and Mission Need Statements (MNSs). IO areas considered include: Psychological Operations (PSYOP), Electronic Warfare, Military Deception, Physical Attack, Information Attack, Information Assurance, Operational Security (OPSEC), Counterintelligence, Counter PSYOP, Electronic Protection, and Counterdeception.</p> <p>(U) The program office works directly with labs, industry, users and battle labs to set priorities and find synergistic combinations of new technology, doctrine and training. Program efforts will be prioritized and guided by the Information Warfare (IW) Technical Planning Integrated Planning Team (TPIPT) in support of the Air Force IW MAP and the DoD IO Master Plan.</p> <p>(U) Planned areas of study prototyping, and/or demonstration include technique and technologies for defending systems against sophisticated Information Warfare (IW) and computer network attacks, exploiting Integrated Air Defense Systems (IADS), Command and Control systems, and applying advanced IO applications in emerging physics, communications, directed energy, electronic sensors, and intelligence.</p> <p>(U) This program also funds the Panther Den program office at Hanscom AFB, MA. The Panther Den program office provides technical, program management, and security support to the programs funded by this PE, as well as PD-classified projects funded via other PEs.</p> <p>(U) Specific program content is classified. Current and historical project information is available in the Panther Den (PD) Special Access Program (SAP) Report.</p>											
Project 4871			Page 13 of 26 Pages				Exhibit R-2A (PE 0303140F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT 4871
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(U) **A. Mission Description Continued**

(U) **FY 2002 (\$ in Thousands)**

(U) \$1,477 The IO Technology program supported the IW TIPIT and the IW MAT though studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements

(U) \$1,477 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$2,965 The IO Technology program will support the IW TIPIT and the IW MAT though studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements

(U) \$2,965 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$758 The IO Technology program will support the IW TIPIT and the IW MAT though studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements

(U) \$758 Total

(U) **B. Project Change Summary**

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	

(U) AF RDT&E 0

(U) Other APPN 0

PE 0303140F studies will leverage current DoD lab efforts. Studies will be deconflicted with and will complement PE 0208021F, Information Warfare Support. Some aspects of this program will be protected under the PANTHER DEN Special Access Program. Data available upon request.

(U) **D. Acquisition Strategy**

All major contracts within this Program Element are awarded after full and open competition unless other than full and open is justified to the Designated Acquisition Commander (DAC).

(U) **E. Schedule Profile**

FY 2002

FY 2003

FY 2004

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003																																								
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																								
07 - Operational System Development					0303140F Information Systems Security Program					4871																																								
(U) E. Schedule Profile Continued																																																		
<table style="width:100%; border: none;"> <thead> <tr> <th style="width: 35%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> <th colspan="4" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th style="text-align: left;">(U) IO Technology Study/Prototype/ bi-annual Demos</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">IO Technology Study/Prototype/ bi-annual Demos</td> <td></td> <td style="text-align: center;">*</td> <td></td> <td style="text-align: center;">*</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table>													<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				(U) IO Technology Study/Prototype/ bi-annual Demos	1	2	3	4	1	2	3	4	1	2	3	4	IO Technology Study/Prototype/ bi-annual Demos		*		*		X		X		X		X
	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>																																									
(U) IO Technology Study/Prototype/ bi-annual Demos	1	2	3	4	1	2	3	4	1	2	3	4																																						
IO Technology Study/Prototype/ bi-annual Demos		*		*		X		X		X		X																																						
X - Denotes planned event * - Denotes completed event																																																		
Project 4871			Page 15 of 26 Pages					Exhibit R-2A (PE 0303140F)																																										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT 4871	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	IO Technology Study/Prototype/Demo					1,477		2,965		758
(U)	Total					1,477		2,965		758
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
LCM	CPFF	Nov 02				1,040	2,481	412	Continuing	TBD
BAE	A&AS(ITSP)	Aug 02				168	192	124	Continuing	TBD
Mitre	FFRDC	Nov 02				269	292	222	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development						1,477	2,965	758	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						1,477	2,965	758	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program						PROJECT 5100	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
5100 Cryptographic Modernization	0	0	23,533	72,461	102,792	207,797	357,983	241,867	Continuing	TBD	

(U) A. Mission Description

The AF Cryptographic Modernization (CM) Program's goal is to modernize the cryptographic inventory to support transforming AF operations necessary to secure the Global Information Grid. Algorithms are expiring, aging equipment is becoming logistically unsupportable, and many assets are not compatible with key management systems. At the same time, we need cryptography with new capabilities able to support transforming AF operations. The program has three primary objectives: 1) complete box-for-box replacement for identified near-term needs; 2) begin modernizing the remaining inventory via incremental capabilities enhancements; and 3) complete transformation will result in an inventory that is modular and scalable; will enable network-centric operations; and result in cryptographic operations that are transparent to the operator. Near-term funding supports primarily replacement efforts. As we move later in the FYDP, modernization/transformation activities take precedence.

Replacement Efforts: Five replacement efforts are currently identified: KG-3X and KI-22 support the Nuclear Command and Control (NC2) mission; CTIC/CDH is an integrated circuit cryptographic engine used primarily for data links; Interrogator Friend-or-Foe (IFF) Mode 5 is an upgrade that improves secure airborne/air traffic situation awareness; and the CI-13 upgrade improves remote re-keying of cryptographic end units.

Modernization Efforts: Initially, modernization efforts will focus on analyzing the current operational inventory for capability gaps, redundancies and best practices. This is accomplished by a large-scale user operational requirements gathering effort. The analysis will identify modernization opportunities that will provide a common solution for multiple crypto end items. They will begin to incrementally incorporate new and emerging technologies (programmability, modularity, scalability, etc.), be network-friendly, and operate with modern key management systems.

Transformation Efforts: Persistent application of cryptographic modernization principles to end unit development will result in an inventory that robustly secures and enables network-centric warfare; is re-configurable; interoperates with Joint and Coalition partners; and whose operation is transparent to the user.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY	PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development	0303140F Information Systems Security Program					5100				
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U) \$0	Accomplishments/Planned Programs									
(U) \$0	No Activity									
(U) \$0	Total									
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U) \$0	Accomplishments/Planned Programs									
(U) \$0	No Activity									
(U) \$0	Total									
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U) \$0	Accomplishments/Planned Programs									
(U) \$3,027	KI-22 Crypto Mod analysis for development of replacement									
(U) \$8,526	KG-3X Crypto Mod analysis for development of replacement									
(U) \$5,127	IFF Crypto Mod analysis for development of replacement									
(U) \$4,526	CTIC/CDH Crypto Mod analysis for development of replacement									
(U) \$2,327	CI-13 Crypto Mod analysis for development of replacement									
(U) \$23,533	Total									
(U) <u>B. Project Change Summary</u>										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN				25,000	27,200	29,300	30,600	11,500	Continuing	TBD
(U) <u>D. Acquisition Strategy</u>										
All major contracts within this Program Element are awarded after full and open competition.										
(U) <u>E. Schedule Profile</u>										
	<u>FY 2002</u>					<u>FY 2003</u>				<u>FY 2004</u>
Project 5100										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0303140F Information Systems Security Program					5100				
(U) E. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Initiate KI-22 Crypto Mod analysis for development of replacement										X			
(U)	Initiate KG-3X Crypto Mod analysis for development of replacement										X			
(U)	Initiate IFF Crypto Mod analysis for development of replacement												X	
(U)	Initiate CTIC-CDH Crypto Mod analysis for development of replacement										X			
(U)	Initiate CI-13 Crypto Mod analysis for development of replacement												X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303140F Information Systems Security Program			5100		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	KI-22 Crypto Mod analysis for development of replacement									3,027
(U)	KG-3X Crypto Mod analysis for development of replacement									8,526
(U)	IFF Crypto Mod analysis for development of replacement									5,127
(U)	CTIC-CDH Crypto Mod analysis for development of replacement									4,526
(U)	CI-13 Crypto Mod analysis for development of replacement									2,327
(U)	Total									23,533
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
OO-ALC/LM (KI-22)	TBD	TBD						3,027	Continuing	TBD
ESC/NDM (KG-3X)	TBD	TBD						8,526	Continuing	TBD
CPSG (CTIC-CDH)	TBD	TBD						5,127	Continuing	TBD
TBD (IFF)	TBD	TBD						4,526	Continuing	TBD
TBD (CI-13)	TBD	TBD						2,327	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
<u>Subtotals</u>					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development								23,533	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project								23,533	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 7820		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
7820	Computer Security RDT&E: Firestarter	14,494	9,903	6,370	6,553	5,092	6,643	6,937	7,199	0	0
<p>(U) A. Mission Description</p> <p>This program directs the Research & Development (R&D) of Information Protect technology/tools to provide the capability to defend USAF Command, Control, Communications, Computer, and Intelligence (C4I) Systems from Information Warfare (IW) Cyber attacks; and to ensure recovery from attacks. As the USAF single manager for Information Protect (R&D), this program directs C4I system Information Protect R&D with emphasis on information/computer/network security, damage assessment and recovery, and dynamic security policy enforcement. The asymmetrical threat of cyber terrorism against our Homeland and deployed networks, has the potential to affect the commander's ability to fight and win because of his dependence upon the availability, timeliness, and integrity of information on our network centric C4I systems. The requirement for global presence and global power has demanded increasing reliance on the advanced information systems and coalition connectivity. The susceptibilities inherent in such reliance on the advanced information systems and coalition connectivity has heightened the awareness that the National Information Infrastructure (NII), the Defense Information Infrastructure (DII), and the Global Information Grid (GIG) must be protected against attack in order to provide the Commander with Global Information Exchange (GIE).</p> <p>Emphasis is therefore placed on R&D areas that provide deterrence of attack through cyberspace surveillance, tactical indications & warning (I&W), intrusion detection, correlation of attack indicators, decision support, recovery, and active response. Since adversaries may gain access to critical AF information systems through a variety of means, this technology will provide the capability of collecting, integrating, and displaying threat, vulnerability, and system data indicating an attack is about to take place and/or is taking place. Current Air Force systems such as the Combat Information Transport Systems (CITS), Theater Deployed Communications (TDC), and Theater Battle Management Core Systems (TBMCS) leverage the technology from this project to meet their information protect needs/requirements. Additionally, this project utilizes information assurance technology investments by DARPA as a jump-start for providing a solution to Air Force requirements and cooperates with DISA and other Services/Agencies to ensure coalition GIE information protect requirements are being met.</p> <p>This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0303140F Information Systems Security Program	7820
(U) A. Mission Description Continued		
(U) FY 2002 (\$ in Thousands)		
(U) \$0	Accomplishment/Planned Program	
(U) \$881	Continued development of technology for self-healing network systems (to include automated system recovery)	
(U) \$573	Continued development of information attack correlation methodologies	
(U) \$741	Continued development of methodologies for commercial software evaluation and steganography detection	
(U) \$924	Continued development of secure agent frameworks for Enterprise Defense to support protection of the warfighter C4ISR systems	
(U) \$371	Completed effort to transition secure wrapper technologies into Air Force systems	
(U) \$471	Continued effort to transition DARPA information assurance (IA) technology into AF Information Protection, Detection, & Response architecture	
(U) \$462	Continued effort to develop metrics for reliable information assurance (IA) measurement and testing	
(U) \$9,418	Continued development of secure interoperable distributed agent computing	
(U) \$245	Began effort to evaluate biometric systems in conjunction with wired and wireless IA network applications	
(U) \$408	Began development of cyber forensic tools and methodologies	
(U) \$14,494	Total	
(U) FY 2003 (\$ in Thousands)		
(U) \$0	Accomplishment/Planned Program	
(U) \$492	Continue development of technology for self-healing network systems (to include automated system recovery)	
(U) \$583	Continue development of information attack correlation methodologies	
(U) \$278	Continue development of methodologies for commercial software evaluation and steganography detection	
(U) \$906	Continue development of secure agent frameworks for Enterprise Defense to support protection of the warfighter C4ISR systems	
(U) \$453	Continue effort to transition DARPA information assurance (IA) technology into AF Information Protection, Detection, & Response architecture	
(U) \$516	Continue effort to develop metrics for reliable information assurance (IA) measurement and testing	
(U) \$5,497	Continue development of secure interoperable distributed agent computing	
(U) \$164	Continue effort to evaluate biometric systems in conjunction with wired and wireless IA network applications	
(U) \$438	Continue development of cyber forensic tools and methodologies	
(U) \$28	Begin effort to provide active response and dynamic policy enforcement to computer/network attack	
(U) \$548	Begin effort to provide dynamic, cost effective, risk mitigation information assurance techniques for wireless terminals and networks	
(U) \$9,903	Total	
Project 7820	Page 22 of 26 Pages	Exhibit R-2A (PE 0303140F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT 7820
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(U) **A. Mission Description Continued**

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishment/Planned Program
(U) \$328	Continue development of technology for self-healing network systems (to include automated system recovery)
(U) \$615	Continue development of information attack correlation methodologies
(U) \$323	Continue development of methodologies for commercial software evaluation and steganography detection
(U) \$934	Continue development of secure agent frameworks for Enterprise Defense to support protection of the warfighter C4ISR systems
(U) \$484	Continue effort to transition DARPA information assurance (IA) technology into AF Information Protection, Detection, & Response architecture
(U) \$226	Continue effort to develop metrics for reliable information assurance (IA) measurement and testing
(U) \$716	Continue development of secure interoperable distributed agent computing
(U) \$234	Continue effort to evaluate biometric systems in conjunction with wired and wireless IA network applications
(U) \$466	Continue development of cyber forensic tools and methodologies
(U) \$464	Continue effort to provide active response and dynamic policy enforcement to computer/network attack
(U) \$446	Continue effort to provide dynamic, cost effective, risk mitigation information assurance techniques for wireless terminals and networks
(U) \$428	Begin effort to provide IA/Cyber modeling and simulation for mission impact assessment and dynamic planning
(U) \$462	Begin effort to provide secure coalition IA data management, collaboration, and visualization
(U) \$244	Begin effort to provide IP Telephony (Voice Over IP) security tools
(U) \$6,370	Total

(U) **B. Project Change Summary**

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	5,048									5,048
(U) Other APPN										
APPN 3600/PE 33112F/ PE Title AF Communica- tions/BPAC 674884/ Title PKI										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003				
BUDGET ACTIVITY						PE NUMBER AND TITLE						PROJECT			
07 - Operational System Development						0303140F Information Systems Security Program						7820			
(U) <u>D. Acquisition Strategy</u>															
All major contracts within this Program Element are awarded after full and open competition.															
(U) <u>E. Schedule Profile</u>															
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4			
(U) Requirements Review Boards		*				X				X					
(U) Completed Transition secure wrapper tech development to AF systems				*											
(U) Continue development of self healing network systems			*				X				X				
(U) Continue DARPA information assurance transition			*				X				X				
(U) Continue development of technology for tracing intrusions			*				X				X				
(U) Continue information attack correlation technology development			*				X				X				
(U) Cont. develop&demo extensible prototype framework Enterprise Defense		*		*		X		X		X		X			
(U) Continue to develop metrics for reliable IA measurement & testing		*				X				X					
(U) Continue to develop automated info damage assessment and recovery	*				*				X						
(U) Continue to evaluate biometric systems		*		*			X				X				
(U) Continue to develop cyber forensic tools & methodologies		*					X				X				
(U) Cont. secure interoperable distrib agent computing (Cong. add FY02/03)				*											
(U) Begin/cont. risk mitigation IA tech for wireless terminals & networks						X									
(U) Begin/cont. active response & dynamic policy enforce. for ntwk. attack						X									
(U) Begin IA/Cyber modeling & simulation											X				
(U) Begin secure coalition IA data mgmt, collaboration, & visualization											X				
(U) Begin IP Telephony (Voice Over IP) security tools											X				
KEY: * Denotes Completed Events; X Denotes Planned Events.															
Project 7820				Page 24 of 26 Pages				Exhibit R-2A (PE 0303140F)							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303140F Information Systems Security Program			7820		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	DARPA technology insertion/transition				471		453			484
(U)	Secure distributed computing/collaborative planning				9,418		5,497			716
(U)	Self-healing network system (to include automated system recovery)				881		492			328
(U)	Wrappers to secure commercial-off-the-shelf (COTS)				371		0			0
(U)	Methodologies for commercial software evaluation and steganography detection				741		278			323
(U)	Information attack data correlation				573		583			615
(U)	Extensible framework for Enterprise Defense				924		906			934
(U)	Reliable information assurance measurement & testing				462		516			226
(U)	Active response & cyber forensic tools				408		438			466
(U)	Biometric systems (wired & wireless networks)				245		164			234
(U)	Active response/dynamic policy enforcements to attacks				0		28			464
(U)	Computer time risk mitigation in wired and wireless networks				0		548			446
(U)	IA/Cyber modeling and simulation				0		0			428
(U)	IP Telephony (Voice Over IP) vulnerability protection				0		0			244
(U)	Secure coalition IA data management, collaboration, and visualization				0		0			462
(U)	Total				14,494		9,903			6,370
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
FFRDC (MITRE)	MIPR	On-Going	N/A	N/A	652	4,303	1,108	1,550	Continuing	TBD
Multiple Contractors	CPFF	On-Going	N/A	N/A	2,277	6,605	8,404	3,988	Continuing	TBD
Universities	CPFF	On-Going	N/A	N/A	368	3,586	391	832	Continuing	TBD
<u>Support and Management Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0303140F Information Systems Security Program			7820	
(U) <u>Performing Organizations Continued:</u>						
<u>Test and Evaluation Organizations</u>						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						<u>Program</u>
Subtotal Product Development		3,297	14,494	9,903	6,370	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		3,297	14,494	9,903	6,370	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303141F Global Combat Support System (GCSS)

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	56,666	25,464	17,473	17,848	17,562	15,776	16,000	16,219	Continuing	TBD
4655 Integrated Logistics System - Supply (ILS-S)	9,136	0	0	0	0	0	0	0	Continuing	TBD
4904 Logistics Integration	6,544	0	0	0	0	0	0	0	Continuing	TBD
4905 GCSS - AF Architecture Development	18,559	0	0	0	0	0	0	0	Continuing	TBD
4906 GCSS - AF Domain Integration	11,667	0	0	0	0	0	0	0	Continuing	TBD
4907 Financial Information Resource System (FIRST)	9,719	0	0	0	0	0	0	0	Continuing	TBD
4928 Electronic Business/Electronic Commerce	1,041	1,091	0	0	0	0	0	0	Continuing	TBD
5046 Systems Engineering & Integration	0	24,373	17,473	17,848	17,562	15,776	16,000	16,219	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2003, 4655, Integrated Logistics System - Supply (ILS-S) efforts transferred to PE 0708611F, Support Systems Development, 5044, Log Application Integrated Logistics System - Supply (LAILS-S), to align functional application development efforts into separate functional PE's, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.

In FY 2003, Project Number 4904, Logistics Integration, efforts transferred to PE 0708611F, Support Systems Development, Project Number 5042, Log Application Logistics Integration (LALI), to align functional application development efforts into separate functional PE's, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.

In FY 2003, Project Number 4905, GCSS-AF Architecture Development, and Project Number 4906, GCSS-AF Domain Integration, efforts were combined into Project

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303141F Global Combat Support System (GCSS)

Number 5046, Systems Engineering and Integration, to align functional application development efforts, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.

In FY 2003, Project Number 4907, Financial Information Resource System (FIRST), efforts transferred to PE 0901538, FIRST, Project Number 5036, Financial Information Resource System (FIRST), to align functional application development efforts into separate functional PE's, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.

In FY 2004, Project Number 4928, Electronic Business/Electronic Commerce (EB/EC), efforts will be transferred to PE 0303200F, Air Force CIO Ops and Support, a 3400 appropriation for Electronic Business/Electronic Commerce (EB/EC), to align the program within the appropriate management structure and ensure funding appropriations consistent with the performance of work. No program requirements will be impacted by this transfer.

(U) A. Mission Description

GCSS-AF will provide the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Expeditionary Aerospace Force to execute the Air Force mission throughout the full spectrum of military operations.

The primary responsibility of GCSS-AF is to provide a secure flow of timely, accurate, and trusted combat support information to any authorized process or user. It will consolidate and integrate automated information systems to achieve cost avoidance, remove business processing inefficiencies, enable reduced deployment footprint, and improve the speed with which information flows.

The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense (DoD) combat support information systems. The modernized systems are being developed in compliance with and hosted on the Defense Information Infrastructure (DII) Common Operating Environment (COE). The modernized systems will be implemented and sustained worldwide and support both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs.

(U) B. Budget Activity Justification

This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AIS).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)
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(U) C. Program Change Summary (\$ in Thousands)	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	52,299	29,168	19,227	TBD
(U) Appropriated Value	53,011	25,968		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-712			
b. Small Business Innovative Research	-1,244			
c. Omnibus or Other Above Threshold Reprogram	0	-229		
d. Below Threshold Reprogram	5,887			
e. Rescissions	-276	-275		
(U) Adjustments to Budget Years Since FY 2003 PBR		0	-1,754	TBD
(U) Current Budget Submit/FY 2004 PBR	56,666	25,464	17,473	TBD

(U) Significant Program Changes:

- For FY03, ILS-S, Logistics Integration and FIRST moved out of Global Combat Support System program (PE 0303141). Architecture Development and Domain Integration were combined to become Systems Engineering & Integration. No program requirements nor program management were impacted by this transfer.

- For FY 2004, Project Number 4928, Electronic Business/Electronic Commerce (EB/EC), efforts transferred to PE 0303200F, Air Force CIO Ops and Support, a 3400 appropriation for Electronic Business/Electronic Commerce (EB/EC), to align the program within the proper management structure and ensure funding appropriations consistent with the performance of work. No program requirements were impacted by this transfer.

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 4655		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4655	Integrated Logistics System - Supply (ILS-S)		9,136	0	0	0	0	0	0	0	Continuing	TBD

In FY 2003, Project Number 4655, Integrated Logistics System - Supply (ILS-S) efforts transferred to PE 0708611, Support Systems Development, Project Number 5044, Log Application Integrated Logistics System - Supply (LAILS-S), to align functional application development efforts into separate functional PE's, provide logical program grouping and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.

(U) A. Mission Description

The primary focus of the Integrated Logistics System - Supply (ILS-S) is the modernization of the Standard Base Supply System (SBSS) to seamlessly integrate with other logistics systems--provides total asset visibility, facilitates regionalization, and enables the war fighter to control, order, receive, and exploit materiel in a cheaper and more efficient manner.

This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Programs
- (U) \$4,060** Supply Modernization (SBSS Tech Refresh Development)
- (U) \$3,097** Componentization (Development)
- (U) \$1,169** Logistics Business Area Integration
- (U) \$120** Logistics Requirements Analysis
- (U) \$690** SPO Operations (Labor, Management Support)
- (U) \$9,136** Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Programs
- (U) \$0** No Activity
- (U) \$0** Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0303141F Global Combat Support System (GCSS)					4655	
(U) <u>A. Mission Description Continued</u>											
(U) <u>FY 2004 (\$ in Thousands)</u>											
(U) \$0 Accomplishments/Planned Programs											
(U) \$0 No Activity											
(U) \$0 Total											
(U) <u>B. Project Change Summary</u>											
Not Applicable.											
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN	0	0	0	0	0	0	0	0	Continuing	Continuing	
(U) <u>D. Acquisition Strategy</u>											
All major contracts awarded after full and open competition.											
(U) <u>E. Schedule Profile</u>											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) INTEGRATED LOGISTICS SYSTEM - SUPPLY (ILS-S)											
(U) Supply Modernization											
(U) Release 2											
(U) Design and Code					*						
(U) Complete Functional System Testing						*					
(U) Release 3											
(U) Define Requirements				*							
(U) Design and Code						*					
(U) Complete Functional System Testing									X		
(U) Component Development											
(U) Requirements Review						*					
Project 4655				Page 5 of 35 Pages				Exhibit R-2A (PE 0303141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)				4655		
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>	
(U)	INTEGRATED LOGISTICS SYSTEM - SUPPLY (ILS-S)				4,060		0			0	
(U)	Supply Modernization (SBSS Tech Refresh Development)				1,169		0			0	
(U)	Logistics Business Area Integration				120		0			0	
(U)	Logistics Requirements Analysis				690		0			0	
(U)	SPO Operations (Labor, Management Support)				3,097		0			0	
(U)	Componentization (Development)				9,136		0			0	
(U)	Total										
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
<u>ILS-S</u>											
Lockheed Martin	IDIQ	15 Aug 95	N/A	N/A	30,616	1,169	0	0	Continuing	TBD	
SSG/SW (Software Factory)	SLA	1 Oct	N/A	N/A	10,615	4,060	0	0	Continuing	TBD	
Keane Federal System	IDIQ	3 Aug 01	N/A	N/A	2,399	2,921	0	0	Continuing	TBD	
<u>LOGISTICS INT</u>											
LMFS	CPAF	Varies	N/A	N/A	14,807	0	0	0	Continuing	TBD	
Oracle	Varies	Varies	N/A	N/A	1,493	0	0	0	Continuing	TBD	
SSG Software Factory	N/A	N/A	N/A	N/A	330	0	0	0	Continuing	TBD	
MITRE	Varies	Varies	N/A	N/A	2,337	0	0	0	Continuing	TBD	
REMIS MSG	N/A	N/A	N/A	N/A	500	0	0	0	Continuing	TBD	
DISA	N/A	N/A	N/A	N/A	45	0	0	0	Continuing	TBD	
Task Contractors	Varies	Varies	N/A	N/A	5,969	0	0	0	Continuing	TBD	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0303141F Global Combat Support System (GCSS)					4655	
(U) Performing Organizations Continued:											
<u>Product Development Organizations</u>											
PMO Tasks	N/A	N/A	N/A	N/A	3,558	0	0	0	Continuing	TBD	
GCSS-AF ARCHITECTURE											
DEV											
Various	IDIQ	15 Aug 95	N/A	N/A	2,106	0	0	0	Continuing	TBD	
LMFS	CPAF	28 May 99	N/A	N/A	9,065	0	0	0	Continuing	TBD	
SSG/DII Engineering	N/A	N/A	N/A	N/A	759	0	0	0	Continuing	TBD	
SSG/DII Mgmt & Ops	N/A	N/A	N/A	N/A	408	0	0	0	Continuing	TBD	
GCSS-AF DOMAIN INT											
LMFS	CPAF	28 May 99	N/A	N/A	5,717	0	0	0	Continuing	TBD	
SSG/DII Engineering	N/A	N/A	N/A	N/A	2,033	0	0	0	Continuing	TBD	
SSG/DII Mgmt & Ops	N/A	N/A	N/A	N/A	147	0	0	0	Continuing	TBD	
FIRST											
ACCENTURE	CPAF	2 Apr 01	N/A	N/A	40,854	0	0	0	Continuing	TBD	
<u>Support and Management Organizations</u>											
ILS-S											
Support Contractors	Various	Various	N/A	N/A	1,457	390	0	0	Continuing	TBD	
SPO Operations	N/A	N/A	N/A	N/A	2,853	596	0	0	Continuing	TBD	
LOGISTICS INT											
PMO Support	N/A	N/A	N/A	N/A	4,407	0	0	0	Continuing	TBD	
Base Support	Varies	Varies	N/A	N/A	2,327	0	0	0	Continuing	TBD	
Support Contractors	Varies	Varies	N/A	N/A	2,071	0	0	0	Continuing	TBD	
GCSS-AF ARCHITECTURE											
DEV											
MITRE	Varies	Varies	N/A	N/A	1,250	0	0	0	Continuing	TBD	
ESC/IO Mgmt & Ops	N/A	N/A	N/A	N/A	550	0	0	0	Continuing	TBD	
GCSS-AF DOMAIN INT											
MITRE	Varies	Varies	N/A	N/A	65	0	0	0	Continuing	TBD	
ESC/IO Mgmt & Ops	N/A	N/A	N/A	N/A	1,859	0	0	0	Continuing	TBD	
Project 4655				Page 8 of 35 Pages				Exhibit R-3 (PE 0303141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development										PROJECT
0303141F Global Combat Support System (GCSS)										4655
(U) Performing Organizations Continued:										
<u>Test and Evaluation Organizations</u>										
LOGISTICS INT										
PMO Tasks	N/A	N/A	N/A	N/A	714	0	0	0	Continuing	TBD
SSG Software Factory	N/A	N/A	N/A	N/A	244	0	0	0	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					133,758	8,150	0	0	TBD	TBD
Subtotal Support and Management					16,839	986	0	0	TBD	TBD
Subtotal Test and Evaluation					958	0	0	0	TBD	TBD
Total Project					151,555	9,136	0	0	TBD	TBD
\$47,940 (\$43,630 for Product Development and \$4,310 for Support and Management) of the Total Prior to FY 2002 is attributable to the ILS-S Project										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 4904		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4904	Logistics Integration		6,544	0	0	0	0	0	0	0	Continuing	TBD
<p>In FY 2003, Project Number 4904, Logistics Integration, efforts transferred to PE 0708611F, Support Systems Development, Project Number 5042, Log Application Logistics Integration (LALI), to align functional application development efforts into separate functional PE's, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.</p> <p>(U) <u>A. Mission Description</u> Logistics Integration is the effort to migrate existing IL legacy systems to the common GCSS-AF Integration Framework. The target is a suite of software components that are continuously updated or refined to embrace emerging best practices and commercial information technology innovations. The strategic plan is the creation of a logistics enterprise system using common software and hardware products requiring a smaller number of interfacing transactions.</p> <p>This program is in Budget Activity 7, Operational Systems Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$1,415 Program Management Office (PMO) Support (U) \$490 PMO Task (U) \$344 Base Support (U) \$1,148 Support Contractors (U) \$3,147 Integration Task Contracts (U) \$6,544 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$0 No Activity (U) \$0 Total</p>												
Project 4904			Page 10 of 35 Pages					Exhibit R-2A (PE 0303141F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)				PROJECT 4904		
(U) A. Mission Description Continued										
(U) FY 2004 (\$ in Thousands)										
(U) \$0 Accomplishments/Planned Programs										
(U) \$0 No Activity										
(U) \$0 Total										
(U) B. Project Change Summary Not Applicable.										
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) D. Acquisition Strategy All major contracts awarded after full and open competition.										
(U) E. Schedule Profile										
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>	
		1	2	3		4	1	2	3	4
(U) IL Portal Components *										
(U) Business Object Document Development *										
(U) Metadata Repository *										
(U) Consolidated Remedy Database *										
(U) Program Hand Books *										
* - Completed Event										
X - Planned Event										
Project 4904			Page 11 of 35 Pages				Exhibit R-2A (PE 0303141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)			4904		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Program Management Office (PMO) Support					1,415		0		0
(U)	PMO Tasks					490		0		0
(U)	Base Support					344		0		0
(U)	Support Contractors					1,148		0		0
(U)	Integration Task Contacts					3,147		0		0
(U)	Total					6,544		0		0
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
LMSI	CPAF	Varies	N/A	N/A	0	663	0	0	Continuing	TBD
Oracle	BPA	Varies	N/A	N/A	0	774	0	0	Continuing	TBD
SSG Software Factory	SLA Annex	1 Oct.	N/A	N/A	0	158	0	0	Continuing	TBD
MITRE	FFRDC	1 Oct	N/A	N/A	0	248	0	0	Continuing	TBD
Sytel/Northrop Grumman	BPA	Varies	N/A	N/A	0	827	0	0	Continuing	TBD
DISA	SLA	Varies	N/A	N/A	0	262	0	0	Continuing	TBD
Task Contractors	Varies	Varies	N/A	N/A	0	424	0	0	Continuing	TBD
PMO Tasks	N/A	N/A	N/A	N/A	0	490	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
PMO Support	N/A	N/A	N/A	N/A	0	1,274	0	0	Continuing	TBD
Base Support	Varies	Varies	N/A	N/A	0	344	0	0	Continuing	TBD
MITRE	FFRDC	1 Oct.	N/A	N/A	0	247	0	0	Continuing	TBD
Support Contractors	Varies	Varies	N/A	N/A	0	309	0	0	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0303141F Global Combat Support System (GCSS)				4904	
(U) Performing Organizations Continued:										
<u>Test and Evaluation Organizations</u>										
PMO Tasks	N/A	N/A	N/A	N/A	0	141	0	0	Continuing	TBD
Software Factory	SLA Annex	1 Oct.	N/A	N/A	0	39	0	0	Continuing	TBD
MITRE	FFRDC	1 Oct.	N/A	N/A	0	344	0	0	Continuing	TBD
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					0	3,846	0	0	TBD	TBD
Subtotal Support and Management					0	2,174	0	0	TBD	TBD
Subtotal Test and Evaluation					0	524	0	0	TBD	TBD
Total Project					0	6,544	0	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003																										
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 4905																									
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost																								
4905	GCSS - AF Architecture Development	18,559	0	0	0	0	0	0	0	Continuing	TBD																								
<p>In FY 2003, Project Number 4905, GCSS-AF Architecture Development, and Project Number 4906, GCSS-AF Domain Integration, efforts were combined into Project Number 5046, Systems Engineering and Integration, to align functional application development efforts, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.</p> <p>(U) <u>A. Mission Description</u> The GCSS-AF architecture is an integrated set of system products that orchestrate the passing of combat support data between applications and software objects, and provides the warfighter real-time access to accurate, current information and decision support tools. It is based on open standard technologies. GCSS-AF Architecture Development will incrementally develop, prototype, and field a knowledge centric open system architecture. Included are those efforts required to implement the GCSS-AF architecture, and include such things as hardware and software engineering; modeling & simulation; design optimization; hardware and software COTS analysis; architecture design; architecture and integration framework interface definitions, standards, and descriptions; systems engineering; software and hardware integration; testing; and other special studies as required. In addition, this program develops and/or acquires the necessary hardware and software required to initially field this architecture.</p> <p>This program also has received funds to continue the development of the Enterprise Data Warehouse (EDW) in support of the AF maintenance data collection program.</p> <p>This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">(U)</td> <td style="width: 15%;">\$0</td> <td style="width: 80%;">Accomplishments/Planned Programs</td> </tr> <tr> <td>(U)</td> <td>\$12,145</td> <td>Integration Framework/Architecture Development</td> </tr> <tr> <td>(U)</td> <td>\$4,100</td> <td>Enterprise Data Warehouse</td> </tr> <tr> <td>(U)</td> <td>\$1,609</td> <td>SSG/DII Engineering</td> </tr> <tr> <td>(U)</td> <td>\$650</td> <td>SSG/DII Program Management and Operations</td> </tr> <tr> <td>(U)</td> <td>\$0</td> <td>Test and Evaluation</td> </tr> <tr> <td>(U)</td> <td>\$55</td> <td>ESC/DIS Program Management and Operations</td> </tr> <tr> <td>(U)</td> <td>\$18,559</td> <td>Total</td> </tr> </table>												(U)	\$0	Accomplishments/Planned Programs	(U)	\$12,145	Integration Framework/Architecture Development	(U)	\$4,100	Enterprise Data Warehouse	(U)	\$1,609	SSG/DII Engineering	(U)	\$650	SSG/DII Program Management and Operations	(U)	\$0	Test and Evaluation	(U)	\$55	ESC/DIS Program Management and Operations	(U)	\$18,559	Total
(U)	\$0	Accomplishments/Planned Programs																																	
(U)	\$12,145	Integration Framework/Architecture Development																																	
(U)	\$4,100	Enterprise Data Warehouse																																	
(U)	\$1,609	SSG/DII Engineering																																	
(U)	\$650	SSG/DII Program Management and Operations																																	
(U)	\$0	Test and Evaluation																																	
(U)	\$55	ESC/DIS Program Management and Operations																																	
(U)	\$18,559	Total																																	
Project 4905			Page 14 of 35 Pages				Exhibit R-2A (PE 0303141F)																												

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0303141F Global Combat Support System (GCSS)				4905		
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U) \$0 Accomplishments/Planned Programs										
(U) \$0 No Activity										
(U) \$0 Total										
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U) \$0 Accomplishments/Planned Programs										
(U) \$0 No Activity										
(U) \$0 Total										
(U) <u>B. Project Change Summary</u>										
Not Applicable.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Operation & Maintenance, AF; PE 0303141F	0	0	0	0	0	0	0	0	Continuing	Continuing
(U) Other Procurement, AF; PE 0303141F	3,655	0	0	0	0	0	0	0	Continuing	Continuing
(U) <u>D. Acquisition Strategy</u>										
All major contracts awarded after full and open competition.										
(U) <u>E. Schedule Profile</u>										
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)					4905		
(U) E. Schedule Profile Continued												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Delivery of IF v2.3 (early delivery)		*										
(U) Delivery of IF v2.4				*								
(U) Analysis of Alternatives (AoA)	*											
* - Completed Event												
X - Planned Event												
Project 4905												
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Exhibit R-2A (PE 0303141F)												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)			4905		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Integration Framework/Architecture Development				12,145		0			0
(U)	Enterprise Data Warehouse				4,100		0			0
(U)	SSG/DII Engineering				1,609		0			0
(U)	SSG/DII Program Management and Operations				650		0			0
(U)	ESC/DIS Program Management and Operations				55		0			0
(U)	Test and Evaluation				0		0			0
(U)	Total				18,559		0			0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin Systems	CPAF	28 May 99	N/A	N/A	0	12,145	0	0	Continuing	TBD
Integration										
SSG/DII Engineering	Service Level Agreement (FFP)	1 Oct 01	N/A	N/A	0	1,609	0	0	Continuing	TBD
MSG/AE	Various	Multiple	N/A	N/A	0	4,100	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
ESC/DIS Program	Time & Material	Multiple	N/A	N/A	0	55	0	0	Continuing	TBD
Management and Operations										
SSG/DII Program	Service Level Agreement (FFP)	N/A	N/A	N/A	0	650	0	0	Continuing	TBD
Management and Operations										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
07 - Operational System Development			0303141F Global Combat Support System (GCSS)			4905
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	17,854	0	0	TBD	TBD
Subtotal Support and Management	0	705	0	0	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	18,559	0	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003																					
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 4906																				
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost																				
4906 GCSS - AF Domain Integration	11,667	0	0	0	0	0	0	0	Continuing	TBD																				
<p>In FY 2003, Project Number 4906, GCSS-AF Domain Integration, and Project Number 4905, GCSS-AF Architecture Development, efforts were combined into Project Number 5046, Systems Engineering and Integration, to align functional application development efforts into separate functional PE's, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.</p> <p>(U) <u>A. Mission Description</u> GCSS-AF Domain Integration provides enhanced capabilities to the warfighter by integrating Automated Information Systems (AIS) applications and necessary hardware onto the GCSS-AF Architecture. Included are those efforts required to successfully enable application and cross-application capabilities, as well as requirements analysis, interface analysis, and modeling & simulation. The enhanced capabilities will also provide guidelines for application developers, technical support to application developers, technical integration, prototyping, application interface testing, architecture testing of applications and common services, support for business process re-engineering, and developing common services for application utilization.</p> <p>This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width:10%;">(U) \$0</td> <td>Accomplishments/Planned Programs</td> </tr> <tr> <td>(U) \$3,184</td> <td>GCSS-AF Enterprise Architecture Engineering</td> </tr> <tr> <td>(U) \$1,501</td> <td>GCSS-AF Applications Integration</td> </tr> <tr> <td>(U) \$1,000</td> <td>Integration Support</td> </tr> <tr> <td>(U) \$510</td> <td>Test and Evaluation</td> </tr> <tr> <td>(U) \$1,146</td> <td>ESC/DIS Engineering</td> </tr> <tr> <td>(U) \$1,029</td> <td>ESC/DIS Program Management and Operations</td> </tr> <tr> <td>(U) \$397</td> <td>SSG/DII Program Management and Operations</td> </tr> <tr> <td>(U) \$2,900</td> <td>Information Resource Support System</td> </tr> <tr> <td>(U) \$11,667</td> <td>Total</td> </tr> </table>											(U) \$0	Accomplishments/Planned Programs	(U) \$3,184	GCSS-AF Enterprise Architecture Engineering	(U) \$1,501	GCSS-AF Applications Integration	(U) \$1,000	Integration Support	(U) \$510	Test and Evaluation	(U) \$1,146	ESC/DIS Engineering	(U) \$1,029	ESC/DIS Program Management and Operations	(U) \$397	SSG/DII Program Management and Operations	(U) \$2,900	Information Resource Support System	(U) \$11,667	Total
(U) \$0	Accomplishments/Planned Programs																													
(U) \$3,184	GCSS-AF Enterprise Architecture Engineering																													
(U) \$1,501	GCSS-AF Applications Integration																													
(U) \$1,000	Integration Support																													
(U) \$510	Test and Evaluation																													
(U) \$1,146	ESC/DIS Engineering																													
(U) \$1,029	ESC/DIS Program Management and Operations																													
(U) \$397	SSG/DII Program Management and Operations																													
(U) \$2,900	Information Resource Support System																													
(U) \$11,667	Total																													
Project 4906			Page 19 of 35 Pages				Exhibit R-2A (PE 0303141F)																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0303141F Global Combat Support System (GCSS)				4906		
(U) A. Mission Description Continued										
(U) FY 2003 (\$ in Thousands)										
(U) \$0 Accomplishments/Planned Programs										
(U) \$0 No Activity										
(U) \$0 Total										
(U) FY 2004 (\$ in Thousands)										
(U) \$0 Accomplishments/Planned Programs										
(U) \$0 No Activity										
(U) \$0 Total										
(U) B. Project Change Summary										
Not Applicable.										
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	0	0	0	0	0	0	0	0	0	0
(U) Other APPN	0	0	0	0	0	0	0	0	0	0
(U) D. Acquisition Strategy										
All major contracts awarded after full and open competition.										
(U) E. Schedule Profile										
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3
(U) Completion of Enterprise Migration Master Plan						*				
(U) Analysis of Alternatives				*						
* - Completed Event										
X - Planned Event										
Project 4906				Page 20 of 35 Pages				Exhibit R-2A (PE 0303141F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0303141F Global Combat Support System (GCSS)			4906			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	GCCS-AF Enterprise Architecture Engineering					3,184		0		0	
(U)	GCSS-AF Applications Integration					1,501		0		0	
(U)	Integration Support					1,000		0		0	
(U)	Test and Evaluation					510		0		0	
(U)	ESC/DIS Engineering					1,146		0		0	
(U)	ESC/DIS Program Management and Operations					1,029		0		0	
(U)	SSG/DII Program Management and Operations					397		0		0	
(U)	Information Resource Support System					2,900		0		0	
(U)	Total					11,667		0		0	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Broadvision	Time and Material	Multiple	N/A	N/A	0	2,501	0	0	Continuing	TBD
<u>Support and Management Organizations</u>											
	Various Integration Support Activities	Various	Multiple	N/A	N/A	0	3,184	0	0	Continuing	TBD
	Information Resource Support System	Various	Multiple	N/A	N/A	0	2,900	0	0	Continuing	TBD
	ESC/DIS Engineering Support	N/A	N/A	N/A	N/A	0	1,146	0	0	Continuing	TBD
	ESC/DIS Program Management and Operations	N/A	N/A	N/A	N/A	0	1,029	0	0	Continuing	TBD
Project 4906											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0303141F Global Combat Support System (GCSS)					4906	
(U) Performing Organizations Continued:											
<u>Support and Management Organizations</u>											
SSG/DII Program	Service Level	N/A	N/A	N/A	0	397	0	0	0	Continuing	TBD
Management and Operations Agreement											
<u>Test and Evaluation Organizations</u>											
46 TS/OGE	Statement of	N/A	N/A	N/A	0	480	0	0	0	Continuing	TBD
Capability											
Joint Interoperability Test	Statement of	N/A	N/A	N/A	0	30	0	0	0	Continuing	TBD
Center Capability											
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Subtotals</u>											
Subtotal Product Development					0	2,501	0	0	TBD	TBD	
Subtotal Support and Management					0	8,656	0	0	TBD	TBD	
Subtotal Test and Evaluation					0	510	0	0	TBD	TBD	
Total Project					0	11,667	0	0	TBD	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	PROJECT 4907
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4907 Financial Information Resource System (FIRST)	9,719	0	0	0	0	0	0	0	Continuing	TBD

The FIRST budget for FY03 and beyond has been realigned to PE 0901538F. Neither program requirements nor program management were impacted by this breakout.

(U) A. Mission Description

FIRST is a software development effort that will provide an integrated, modern, seamless financial management system that enables authorized users (from Air Staff to base level) to plan, program, and execute their budgets. FIRST is ultimately envisioned to be the foundation for the Air Force's Planning, Programming, and Budgeting System (PPBS). FIRST will be developed using the Spiral Development approach. The core increments include Acquire Accounting, Budget Formulation, Funds Management, Budget Execution, and Cost Modeling. Additional increments of FIRST will continue development of legacy system's functionality contained in the Automated Business Services System (ABSS), Budget Enactment Management Information System (BEMIS), and the Obligation Adjustment Reporting System (OARS). FIRST will be compliant with the Clinger-Cohen Act, Financial Management Modernization Program (FMMP), the Joint Technical Architecture (JTA), GCSS-Air Force Integration Framework, C4ISR, and incorporate Public Key Infrastructure initiatives (such as electronic signature capability). FIRST will be integrated onto the GCSS-AF architecture.

Acquire Accounting provides flexible, easy-to-use report generation and decision support tools for Air Force managers, incorporates the new DOD Standard Fiscal Codes (SFC) into FIRST, and delivers timely budget execution data to minimize the budget community's dependency on formal end-of-month accounting reports. The Budget Formulation increment provides for programming, budget formulation, budget justification processes and documentation. It encompasses the budget exercise process, which affects all organizational levels and all users, and is based on core financial and selected program information used to build the Air Force budget. Funds Management encompasses the methods and procedures for maintaining control over the status of adjustments to the President's Budget (PB), receipt and distribution of program authority and budget authorizations in accordance with established business rules. Budget Execution provides analysis tools and execution data to budget offices at all levels. It includes analysis tools for monitoring budget execution information, determining unfunded requirements, and fiscal year-end processing. The Cost Modeling increment provides interactive cost modeling capability for manpower, flying hours, civilian pay, and other similar model driven costs based on resource information. In accordance with the Operational Requirements Document (ORD), FIRST will continue development of legacy systems (e.g., Automated Business Services System (ABSS), Budget Enactment Management Information System (BEMIS), and Obligation Adjustment Reporting System (OARS)) into FIRST.

This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0303141F Global Combat Support System (GCSS)				4907		
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2002 (\$ in Thousands)</u>										
(U)	\$0	Accomplishments/Planned Programs								
(U)	\$1,976	FIRST GCSS-AF Integration								
(U)	\$6,800	Application Development for Acquire Accounting								
(U)	\$893	Application Development for Budget Formulation								
(U)	\$50	Government Independent Test								
(U)	\$9,719	Total								
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U)	\$0	Accomplishments/Planned Programs								
(U)	\$0	No Activity								
(U)	\$0	Total								
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U)	\$0	Accomplishments/Planned Programs								
(U)	\$0	No Activity								
(U)	\$0	Total								
(U) <u>B. Project Change Summary</u>										
Not Applicable.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Operations & Maintenance, AF; PE38601F	2,900	0	0	0	0	0	0	0	Continuing
(U) <u>D. Acquisition Strategy</u>										
All major contracts awarded after full and open competition.										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)	PROJECT 4907
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(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin Acquire Accounting Developmental Test				*								
(U) Complete Acquire Accounting Spiral 1		*										
(U) Complete Acquire Accounting Spiral 2				*								
* - Completed Event												
X - Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)			PROJECT 4907			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	FIRST GCSS-AF Integration					1,976		0		0	
(U)	Application Development for Acquire Accounting					6,800		0		0	
(U)	Application Development for Budget Formulation					893		0		0	
(U)	Government Independent Test					50		0		0	
(U)	Total					9,719		0		0	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Accenture	Cost Plus Award Fee Contract	2 Apr 01	37,500	37,500	0	7,693	0	0	Continuing	TBD
	Lockheed Martin SI	CPAF Contract	28 May 99	TBD	N/A	0	1,976	0	0	Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
	Joint Interoperability Test Center (JITC)		Aug 02	N/A	N/A	0	50	0	0	Continuing	TBD
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0303141F Global Combat Support System (GCSS)		4907	
(U) Government Furnished Property Continued:						
<u>Test and Evaluation Property</u>						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
				<u>Budget to</u>		<u>Total</u>
				<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			0	9,669	0	0
Subtotal Support and Management						TBD
Subtotal Test and Evaluation			0	50	0	0
Total Project			0	9,719	0	0
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 4928	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4928 Electronic Business/Electronic Commerce	1,041	1,091	0	0	0	0	0	0	Continuing	TBD
<p>In FY 2004, Project Number 4928, Electronic Business/Electronic Commerce (EB/EC), efforts will be transferred to PE 0303200F, Air Force CIO Ops and Support, a 3400 appropriation for Electronic Business/Electronic Commerce (EB/EC), to align the program within the appropriate management structure and ensure funding appropriations consistent with the performance of work. No program requirements nor program management will be impacted by this transfer.</p> <p>(U) <u>A. Mission Description</u> The EC Project is part of the initial phase of the Air Force's discipline for defining, planning and selecting IT investments to meet its overall mission and support operational/warfighter needs. The EC Project supports eCommerce and eBusiness pilots (proofs-of-concept) with highest likelihood for producing near-term, tangible results. Initial Business Case Analyses are produced for each candidate pilot and submitted by Sponsors/Process Owners to the AF EC Project Board. The Board selects pilots based on their potential to transform or re-engineer business processes across the AF. Upon completion, each pilot is assessed against its initial Business Case Analysis and a common set of EC proof-of-concept criterion. If deemed a strong business case in the areas of effectiveness, efficiency gains, security, privacy and enterprise architecture, the pilots are recommended for transition to a capital investment program plan and acquisition strategy. All relevant customers and stakeholders participate throughout the pilot phase in order to fully assess the functional and technical basis/rationale for investment and acquisition.</p> <p>This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$624 Core Support (U) \$0 Enterprise Model & EC Gateway Support (U) \$115 Electronic Business/Electronic Commerce Reengineering Initiatives (U) \$302 Electronic Business/Electronic Commerce Advanced Technology Prototypes (U) \$1,041 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$478 Concept Exploration (U) \$446 Planning (U) \$167 Program Management</p>										
Project 4928			Page 28 of 35 Pages				Exhibit R-2A (PE 0303141F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)				4928		
(U) A. Mission Description Continued											
(U) FY 2003 (\$ in Thousands) Continued											
(U) \$1,091 Total											
(U) FY 2004 (\$ in Thousands)											
(U) \$0 Accomplishments/Planned Programs											
(U) \$0 No Activity											
(U) \$0 Total											
(U) B. Project Change Summary											
Not Applicable.											
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) PE 38610F	1,026	1,306	0	0	0	0	0	0	Continuing	TBD	
(U) Operations & Maintenance, AF, PE 38610F	2,400	3,178	2,583	2,592	2,725	2,769	2,822	2,875	Continuing	TBD	
(U) D. Acquisition Strategy											
All major contracts awarded after full and open competition.											
(U) E. Schedule Profile											
				<u>FY 2002</u>				<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) Concept Exploration								X			
(U) Planning								X			
(U) Program Management								X			
* = Completed Event											
X = Planned Event											
Project 4928			Page 29 of 35 Pages				Exhibit R-2A (PE 0303141F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)					PROJECT 5046	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5046 Systems Engineering & Integration	0	24,373	17,473	17,848	17,562	15,776	16,000	16,219	Continuing	TBD
<p>In FY 2003, Project Number 5046, Systems Engineering and Integration, combined Project Number 4905, GCSS-AF Architecture Development, and Project Number 4906, GCSS-AF Domain Integration, into one BPAC to align functional application development efforts, provide logical program grouping, and increase effective oversight of the program. Neither program requirements nor program management were impacted by this transfer.</p> <p>(U) <u>A. Mission Description</u> Global Combat Support System - Air Force (GCSS-AF) is an umbrella program to develop a modern integrated system that provides for Agile Combat Support (ACS) for the Air Force. This information is necessary to train, equip, deploy, employ, sustain and redeploy Expeditionary Air Forces (EAFs) world wide during peace and war and support the warfighting Combatant Commanders. The GCSS-AF architecture is an integrated set of system products that orchestrate the passing of combat support data between applications and software objects, and provides the warfighter real-time access to accurate, current information and decision support tools. It is based on open standard technologies. Included are efforts such as hardware and software engineering; modeling and simulation; design optimization; hardware and software COTS analysis; and architecture design. Other standard technologies include architecture and integration framework interface definitions, standards and descriptions; system engineering; software and hardware integration; testing; and other special studies as required. Other efforts included to successfully enable application and cross-application capabilities are requirements analysis, interface analysis, and modeling and simulation. Also included are developing guidelines for application developers, technical support to application developers, technical integration, prototyping, application interface testing, architecture testing of applications and common services, support for business process reengineering, and developing common services for application utilization.</p> <p>This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Programs (U) \$7,873 Presentation Services (Air Force Portal) (U) \$5,686 Integration Framework/Architecture Development (U) \$2,810 GCSS-AF Application Integration</p>										
Project 5046			Page 31 of 35 Pages				Exhibit R-2A (PE 0303141F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0303141F Global Combat Support System (GCSS)	5046
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands) Continued</u>		
(U) \$2,187	SSG/DII Engineering	
(U) \$1,050	SSG/DII Program Management and Operations	
(U) \$1,050	Test and Evaluation	
(U) \$787	ESC/DIS Engineering	
(U) \$1,094	ESC/DIS Program Management and Operations	
(U) \$1,836	Integrated Requirements Support System (IRSS) Integration	
(U) \$24,373	Total	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$3,000	Presentation Services (Air Force Portal)	
(U) \$5,679	Integration Framework/Architecture Development	
(U) \$1,594	GCSS-AF Application Integration	
(U) \$2,500	SSG/DII Engineering	
(U) \$1,200	SSG/DII Program Management and Operations	
(U) \$1,200	Test and Evaluation	
(U) \$600	ESC/DIS Engineering	
(U) \$1,200	ESC/DIS Program Management and Operations	
(U) \$500	Integrated Requirements Support System Integration	
(U) \$17,473	Total	
(U) <u>B. Project Change Summary</u>		
Not Applicable.		
Project 5046	Page 32 of 35 Pages	Exhibit R-2A (PE 0303141F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303141F Global Combat Support System (GCSS)				PROJECT 5046		
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E									Continuing		
(U) Other APPN											
(U) Operation & Maintenance, AF; PE 33141F	0	1,608	10,112	14,649	16,003	15,914	16,075	16,244	Continuing	TBD	
(U) Other Procurement, AF; PE 33141F	3,463	9,604	12,540	21,695	22,001	24,844	25,895	26,422	Continuing	TBD	
(U) D. Acquisition Strategy											
All major contracts awarded after full and open competition.											
(U) E. Schedule Profile											
				<u>FY 2002</u>				<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) Cost Analysis Requirements Description (CARD)								*			
(U) Clinger-Cohen Certification									X		
(U) Test and Evaluation Master Plan (TEMP)									X		
(U) Independent Cost Estimate (ICE)									X		
(U) Evolutionary Acquisition Decision Review									X		
(U) Milestone B									X		
(U) Initial IRSS Integration										X	
* = Completed Event											
X = Planned Event											
Project 5046			Page 33 of 35 Pages					Exhibit R-2A (PE 0303141F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303141F Global Combat Support System (GCSS)			5046		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Presentation Services (Air Force Portal)				0		7,873		3,000	
(U)	Integration Framework/Architecture Development				0		5,686		5,679	
(U)	GCSS-AF Application Integration				0		2,810		1,594	
(U)	ESC/DIS Engineering				0		2,187		2,500	
(U)	ESC/DIS Program Management and Operations				0		1,050		1,200	
(U)	SSG/DII Engineering				0		1,050		600	
(U)	SSG/DII Program Management and Operations				0		787		1,200	
(U)	Test and Evaluation				0		1,094		1,200	
(U)	Integrated Requirements Support System (IRSS) Integration				0		1,836		500	
(U)	Total				0		24,373		17,473	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Presentation Services (Air Force Portal)	Multiple	Multiple	N/A	N/A	0	0	7,873	3,000	Continuing	TBD
Lockheed Martin Systems Integration	CPAF	28 May 99	N/A	N/A	0	0	8,496	7,273	Continuing	TBD
SSG/DII Engineering	Service Level Agreement (FFP)	1 Oct 01	N/A	N/A	0	0	2,187	2,500	Continuing	TBD
MSG/MM	SLA	1 Oct 02	N/A	N/A	0	0	1,836	500	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0303141F Global Combat Support System (GCSS)					5046	
(U) Performing Organizations Continued:											
<u>Support and Management Organizations</u>											
ESC/DIS Program	Time &	Multiple	N/A	N/A	0	0	1,094	1,200	Continuing	TBD	
Management and Operations	Material										
SSG/DII Program	Service level	N/A	N/A	N/A	0	0	1,050	1,200	Continuing	TBD	
Management and Operations	Agreemet (SLA)										
ESC/DIS Engineering	N/A	N/A	N/A	N/A	0	0	787	600	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
Test and Evaluation	N/A	N/A	N/A	N/A	0	0	1,050	1,200	Continuing	TBD	
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Subtotals</u>											
Subtotal Product Development					0	0	20,392	13,273	TBD	TBD	
Subtotal Support and Management					0	0	2,931	3,000	TBD	TBD	
Subtotal Test and Evaluation					0	0	1,050	1,200	TBD	TBD	
Total Project					0	0	24,373	17,473	TBD	TBD	

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM				PROJECT 4667																																																														
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost																																																												
4667	Global Command and Control System - AF	5,576	3,492	3,547	3,620	3,632	3,702	3,770	3,750	Continuing	TBD																																																												
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0																																																												
<p>(U) <u>A. Mission Description</u> The Global Command and Control System (GCCS) is the designated Command and Control (C2) migration system for the DoD. It is an integrated Command, Control, Communications, Computer, and Intelligence (C4I) system capable of supporting all echelons of the US military command structure. GCCS solves C4I interoperability problems between Service components by establishing a Defense Information Infrastructure (DII) Common Operating Environment (COE), and has an end objective to eliminate stovepiped systems. The Global Command and Control System-Air Force program provides C2, intelligence, surveillance, reconnaissance and operational information for the Joint Force Air Component Commander (JFACC) and the Aerospace Operations Center (AOC) for planning and execution, air space deconfliction, targeting, weaponeering, and many other applications supporting air operational command and control, and fully supports the Aerospace Expeditionary Force (AEF) concept. The Air Force is responsible for developing four of the modules that will make up the COE, and integration of Air Force unique applications with the COE. Integration efforts will be directed towards future aerospace C2 concepts supporting requirements for the AOC, including intelligence, surveillance, and reconnaissance and intended to automate operational systems with an end objective for saving manpower and reducing costs. GCCS-AF will add integrated applications satisfying requirements for the Common Operational Picture (COP), Single Integrated Air Picture (SIAP), Family of Interoperable Operational Pictures (FIOP), Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT), and Deliberate Crisis Action Planning and Execution Segment (DCAPES). The COP will integrate data to provide the SIAP and the FIOP.</p>																																																																							
<p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width: 5%;">(U) \$700</td> <td style="width: 15%;">Continue Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution</td> <td colspan="10"></td> </tr> <tr> <td>(U) \$1,804</td> <td>Continue Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPES, ATO Reader, Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT)), Prototype Software Development, GCCS Migration Support</td> <td colspan="10"></td> </tr> <tr> <td>(U) \$500</td> <td>Continue DII COE Development and Distribution</td> <td colspan="10"></td> </tr> <tr> <td>(U) \$2,572</td> <td>Air Force wide Oracle Enterprise licenses (Funded in a mid year BTR)</td> <td colspan="10"></td> </tr> <tr> <td>(U) \$5,576</td> <td>Total</td> <td colspan="10"></td> </tr> </table>												(U) \$700	Continue Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution											(U) \$1,804	Continue Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPES, ATO Reader, Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT)), Prototype Software Development, GCCS Migration Support											(U) \$500	Continue DII COE Development and Distribution											(U) \$2,572	Air Force wide Oracle Enterprise licenses (Funded in a mid year BTR)											(U) \$5,576	Total										
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Project 4667			Page 1 of 6 Pages				Exhibit R-2 (PE 0303150F)																																																																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																													
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	PROJECT 4667																																													
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$915 Continue Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution</p> <p>(U) \$2,027 Continue Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPEs, ATO Reader, Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT)), Prototype Software Development, GCCS Migration Support</p> <p>(U) \$550 Continue DII COE Development and Distribution</p> <p>(U) \$3,492 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$962 Continue Integration and Development of Future Aerospace C2 Concepts, Crisis Action Planning Evolution</p> <p>(U) \$2,035 Continue Integration of Air Force Capabilities into GCCS (COP, SIAP, FIOP, DCAPEs, ATO Reader, Joint Defensive Planner (JDP), Joint Targeting Toolbox (JTT)), Prototype Software Development, GCCS Migration Support</p> <p>(U) \$550 Continue DII COE Development and Distribution</p> <p>(U) \$3,547 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This effort is Budget Activity 7, Operational System Development, because the program develops and implements software, and engineers and implements communications for an integrated operational communications and computer network that will eventually evolve to the Global Grid, Global Information Grid, and Global Battlespace Infosphere (GBI).</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>FY 2004</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">3,166</td> <td style="text-align: center;">3,565</td> <td style="text-align: center;">3,618</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">3,521</td> <td style="text-align: center;">3,565</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-355</td> <td style="text-align: center;">-38</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-96</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-35</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: center;">2,534</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: center;">-28</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	3,166	3,565	3,618	TBD	(U) Appropriated Value	3,521	3,565			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-355	-38			b. Small Business Innovative Research	-96				c. Omnibus or Other Above Threshold Reprogram		-35			d. Below Threshold Reprogram	2,534				e. Rescissions	-28			
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Adjustments to Budget Years Since FY 2003 PBR			-71	
(U) Current Budget Submit/FY 2004 PBR	5,576	3,492	3,547	TBD
(U) <u>Significant Program Changes:</u> N/A				

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to Complete</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>Estimate</u>		
(U) AF RDT&E										
(U) Other APPN										TBD
(U) Other Procurement, AF (3080)	14,477	27,910	23,457	19,215	18,920	19,263	19,599	19,940	Continuing	

(U) **E. Acquisition Strategy**

Electronic Systems Center (ESC) Hanscom AFB, MA manages the integration and infrastructure of the Air Force Global Command and Control Family of Systems developed/fielded using spiral acquisition approaches. Common Operating Environment (COE) and GCCS-Joint compliance is performed by ESC to support Air Force contribution to the Joint Services and to support the separate Air Force mission applications that operate in the COE.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Integration and Development of Future Aerospace Command C2 Concepts					*	X	X	X	X	X	X	X
(U) Crisis Action Planning Evolution	*		*		*		X		X		X	
(U) Definition and Integration of Air Force Capabilities into GCCS					*	X	X	X	X	X	X	X
(U) DCAPES Application Integration	*			*	*		X		X		X	
(U) ATO Reader	*											
(U) Joint Defensive Planner (JDP)		*										

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
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(U) F. Schedule Profile Continued												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Prototype Software Development				*				X				X
(U) GCCS Migration Support		*		*		X		X		X		X
(U) COE Development and Distribution				*				X				X
(U) Software Development & Integration		*			*		X					
(U) Integration Testing & Evaluation		*			*		X		X		X	
(U) System Testing		*			*		X		X		X	
* Denotes Completed Event												
X Denotes Planned Event												
Project 4667				Page 4 of 6 Pages				Exhibit R-2 (PE 0303150F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM			4667		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Integration and Development of Future Aerospace Command C2 Concepts, Crisis Action Planning Evolution					700		915		1,000
(U)	Definition and Integration of Air Force Capabilities into GCCS, Prototype Software Development, GCCS Migration Support					1,804		2,027		2,035
(U)	Air Force wide Oracle Enterprise licenses					2,572				
(U)	DII COE Development and Distribution					500		550		512
(U)	Total					5,576		3,492		3,547
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Miscellaneous	various	various			265				0	265
Air Force wide Oracle Enterprise licenses	various	May 02			0	2,572				2,572
WINxB	FFP	Apr 02			0	600	1,000	1,100	Continuing	TBD
DCAPES	FFP/LHAF	Jul 98			8,776				0	8,776
*In FY 00 DCAPES funding is transferred to PE 27438										
<u>Support and Management Organizations</u>										
Information Technology Services Program (ITSP)		various			1,909	450	792	553	Continuing	TBD
MITRE		various			7,616	1,700	1,500	1,650	Continuing	TBD
Miscellaneous SPO		various			623	254	200	244	Continuing	TBD
<u>Test and Evaluation Organizations</u>										

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303150F WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	PROJECT 4667
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(U) Government Furnished Property:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				9,041	3,172	1,000	1,100	TBD	TBD
Subtotal Support and Management				10,148	2,404	2,492	2,447	TBD	TBD
Subtotal Test and Evaluation									
Total Project				19,189	5,576	3,492	3,547	TBD	TBD

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303401F Communications Security						PROJECT 4861	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4861 Cryptologic 2000	3,726	4,661	0	0	0	0	0	0	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

Note: Starting in FY04 this BPAC is being moved out of PE 33401, Comsec, and into PE 33140, Infosec, same BPAC number and title.

(U) A. Mission Description

The Cryptologic 2000 Project consists of multiple developments supporting the Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA's EKMS, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for AF C4I and weapon systems. AFEKMS replaces the existing physical distribution and management system providing cryptographic keying material for USAF Information Assurance. Information Assurance emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three-tier system structure in a hierarchical arrangement. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the 'wholesale' capability. Tier 2 installations comprise the distribution network and Tier 3 comprises the 'retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE).

Acquisition includes Commercial Off-The-Shelf (COTS) computers and software, contractor-developed application software, and Government Furnished Equipment (GFE) and software such as NSA's Local COMSEC Management Software (LCMS). The USAF-developed user application software (UAS) is necessary to provide a common framework for specific functions of unique key management systems such as the F-22, Advanced EHF COMSEC/TRANSEC System (ACTS), Joint Strike Fighter, and other current and future programs. Further, unique key fill requirements of EICE for AF applications such as ARC-210, Fighter Data Link, Airborne Integrated Terminal Group and Multi-Band Multi-Mode Radio, and other current and future programs are also supported by AFEKMS developments. The UASs developed by the AFEKMS SPO improve the LCMS user interface, integrate multiple independent UASs into a single commonly supported package, and moderate unique UASs running on the same platform when integration is not possible. They also allow automation of manual operator processes in order to save manpower, reduce required training, and improve mission effectiveness.

Overall AFEKMS will improve protection of national Security-related information by enhancing confidentiality, integrity, and non-repudiation substantially over legacy key management systems. AFEKMS will greatly accelerate availability of key through electronic transmission vice shipping of materials, and will enhance mission responsiveness and flexibility. While much of the current AFEKMS level of effort is directed at enhancing current and developing systems, the ultimate aim is to provide a migration path to future functionality planned under NSA's Key Management Infrastructure (KMI) initiative. Such KMI functionality is expected to emerge

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<p>(U) <u>A. Mission Description Continued</u> about 2007.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$2,032 Continued program office contract support of EKMS User Application Software including migration to the Key Management Infrastructure (KMI) and the Browser-Based Development effort</p> <p>(U) \$1,694 Continued End User Application Software Development: common UAS, Local Management Device/Data Management Device (LMD/DMD) browser interface, KOV-21 Integration, and computer-based training</p> <p>(U) \$3,726 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$1,398 Continue program office contract support of EKMS User Application Software including migration to the Key Management Infrastructure (KMI) and the Browser-Based Development effort</p> <p>(U) \$3,263 Continue End User Application Software Development: common UAS, Local Management Device/Data Management Device (LMD/DMD) browser interface, KOV-21 Integration, and computer-based training</p> <p>(U) \$4,661 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 7, Operational System Development, because it addresses the development and transition of information security, protection and defensive capabilities and technologies.</p>		
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							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0303401F Communications Security			4861				
(U) C. Program Change Summary (\$ in Thousands)											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			3,942	4,765	14,638					
(U)	Appropriated Value			4,131	4,765						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-189	-6						
	b. Small Business Innovative Research			-113							
	c. Omnibus or Other Above Threshold Reprogram					-47					
	d. Below Threshold Reprogram			-85							
	e. Rescissions			-18	-51						
(U)	Adjustments to Budget Years Since FY 2003 PBR					-14,638					
(U)	Current Budget Submit/FY 2004 PBR			3,726	4,661	0		TBD			
(U)	<u>Significant Program Changes:</u>										
	Moved out of PE 33401, Comsec, starting in FY04. Will be placed in PE 33140, Infosec, using the same BPAC number.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	1,300	1,700							0	3,000
(U)	F-22 EMD (BA05, PE 0604239F, Avionics Block 3.1.1)										
(U)	Continuation of BPAC 674861 under another PE (BA07, PE 33140F, Infosec)			4,180	3,284	3,311	3,540	3,599	3,629	Continuing	TBD
(U)	<u>E. Acquisition Strategy</u>										
	All major contracts within this Program Element are awarded after full and open competition.										
(U)	<u>F. Schedule Profile</u>										
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>			

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BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT					
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(U) <u>F. Schedule Profile Continued</u>																
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>						
					1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue End User Application SW devel., Common UAS, & KOV-21 integ.																
NOTE: NSA is lead service on the DoD EKMS Program. NSA changes to the overall program drive AFEKMS changes.																
Project 4861					Page 4 of 6 Pages						Exhibit R-2 (PE 0303401F)					

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303401F Communications Security			PROJECT 4861			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Software Development					3,726		4,661		0	
(U)	Total					3,726		4,661		0	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</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>										
	SAIC	BPA	May 98	N/A	N/A	5,848	1,672	1,340	0	Continuing	TBD
	Mitre	FFRDC	Nov 00	N/A	N/A	1,330	1,910	3,206	0	Continuing	TBD
	Windmill Int'l, Inc.	BPA	Nov 01	N/A	N/A	0	144	115	0	Continuing	TBD
	<u>Support and Management Organizations</u>										
	N/A										
	<u>Test and Evaluation Organizations</u>										
	N/A										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	N/A										
	<u>Support and Management Property</u>										
	N/A										
	<u>Test and Evaluation Property</u>										
	N/A										
Project 4861					Page 5 of 6 Pages	Exhibit R-3 (PE 0303401F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0303401F Communications Security		4861	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		7,178	3,726	4,661	0	TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						TBD
Total Project		7,178	3,726	4,661	0	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303601F MILSATCOM Terminals					PROJECT 2487		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2487	MILSATCOM Terminals	38,751	71,293	173,831	241,906	238,037	174,566	218,886	229,486	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) A. Mission Description</p> <p>The MILSATCOM Terminals program develops equipment enabling users to communicate via Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF), Wideband Gapfiller Satellite (WGS), Defense Satellite Communication System (DSCS), and other military satellites, as well as commercial satellites, to support tactical Air and Space Expeditionary Force (AEF) requirements and maintain essential connectivity for strategic forces. Program RDT&E currently supports the following efforts:</p> <ol style="list-style-type: none"> 1) Concept development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes increasing throughput, facilitating sustainability, reducing footprint on user platform and supporting network centricity. 2) Ground Multi-band Terminal (GMT) development. In addition to supporting the Air and Space Expeditionary Force (AEF) requirement for increased information, GMT will replace Air Force Ground Mobile Force (GMF) terminals with higher-capacity military communications to provide tactical ground forces with connectivity via the X- and Ka-band WGS, X-band DSCS, and commercial C- and Ku-band satellites to significantly increase throughput for inter- and intra-theater tactical force information such as air tasking orders, battle damage assessments, and reconnaissance data. 3) Family of Advanced Beyond-Line-of-Sight Terminals (FAB-T) development. FAB-T will develop robust, secure, survivable EHF voice and data satellite communications terminals for nuclear and conventional forces. FAB-T variants will provide ground and airborne command posts and other aircraft with connectivity to Milstar and AEHF satellites, while providing an open architecture terminal to support future increments for WGS, EHF payloads on polar and UHF Follow-on (UFO) satellites, Global Broadcast Service payloads and Transformational Communications satellites. 4) High Data Rate (HDR) Radio Frequency (RF) Terminals. Develops High Data Rate (HDR) RF terminals to operate with increased RF capacity on Wideband Gapfiller System (WGS) and Advanced Wideband System (AWS) satellite providing 2-way Ka-band satellite communications for High Altitude Endurance (HAE) aircraft and to support the Distributed Common Ground System (DCGS) receipt of data rates up to 274 Mbps to satisfy Intelligence, Surveillance, and Reconnaissance (ISR) requirements. 5) Lasercom Development. Develops a laser communications terminal to support Beyond Line-of-Sight (BLOS) and Line-of-Sight (LOS) communications for High Altitude Endurance (HAE) Intelligence, Surveillance and Reconnaissance (ISR) aircraft (Global Hawk & U-2) and command and control aircraft (MC2A); supports transformational communications initiatives which require laser transmission of sensor data at rates above 1 Gbps over Transformational Communications satellites. 6) Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities. 7) Wideband Antenna development. Provides a multi-beam, multi-band phased array antenna enabling simultaneous connectivity to more than one satellite for aircraft. 											
Project 2487		Page 1 of 7 Pages					Exhibit R-2 (PE 0303601F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0303601F MILSATCOM Terminals	2487
<p>(U) <u>A. Mission Description Continued</u> Addresses limited aircraft external surface area, historically high antenna integration costs, and aerodynamic and low observability restrictions. Eliminates the need to develop separate solutions for each platform to meet unique power and data rate requirements and provides advancements to avoid jamming.</p>		
<p>(U) <u>FY 2002 (\$ in Thousands)</u></p>		
(U) \$0	Accomplishments/Planned Program	
(U) \$3,449	Continued concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$24,799	Continued Ground Multi-band Terminal (GMT) development	
(U) \$10,503	Began Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development.	
(U) \$38,751	Total	
<p>(U) <u>FY 2003 (\$ in Thousands)</u></p>		
(U) \$0	Accomplishments/Planned Program	
(U) \$1,047	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$52,318	Continue Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development	
(U) \$3,628	Continue Ground Multi-band Terminal (GMT) development	
(U) \$5,550	Begin JSTARS development to assume Airborne Battlefield Command and Control Center (ABCCC) role	
(U) \$5,100	Begin initial development of High Data Rate (HDR) RF Terminals	
(U) \$3,650	Begin initial development for Lasercom Terminals	
(U) \$71,293	Total	
<p>(U) <u>FY 2004 (\$ in Thousands)</u></p>		
(U) \$0	Accomplishments/Planned Program	
(U) \$3,307	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$96,596	Continue Family of Advanced Beyond-Line-of-Sight Terminals (FAB-T) development	
(U) \$7,077	Continue Ground Multi-band Terminal (GMT) development	
(U) \$31,940	Continue High Data Rate (HDR) RF Terminals development	
(U) \$7,322	Continue Joint Terminal Engineering Office (JTEO) Support (Funding transferred from PEs 0603430F and 0603854F)	
(U) \$14,401	Continue Lasercom Terminals development.	
(U) \$13,188	Initiate Wideband Antenna Development.	
(U) \$173,831	Total	
Project 2487	Page 2 of 7 Pages	Exhibit R-2 (PE 0303601F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303601F MILSATCOM Terminals				PROJECT 2487		
(U) <u>B. Budget Activity Justification</u>										
This effort is funded in Budget Activity 7, Operational System Development, because some of its programs have completed Milestone C reviews and are in production.										
(U) <u>C. Program Change Summary (\$ in Thousands)</u>										
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			<u>Total Cost</u>	
(U)	Previous President's Budget			40,431	72,712	125,932			TBD	
(U)	Appropriated Value			41,763	72,712					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions			-1,332	-994					
	b. Small Business Innovative Research			-1,591						
	c. Omnibus or Other Above Threshold Reprogram				-425					
	d. Below Threshold Reprogram			100						
	e. Rescissions			-189						
(U)	Adjustments to Budget Years Since FY 2003 PBR					47,899				
(U)	Current Budget Submit/FY 2004 PBR			38,751	71,293	173,831			TBD	
(U) <u>Significant Program Changes:</u>										
Increased FY04 funds are for High Data Rate (HDR) Radio Frequency (RF) Terminals development; Lasercom Terminals development; Wideband Antenna Development and incorporation of Joint Terminal Engineering Office support from PEs 0603430F and 0603854F into this PE.										
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	
(U)	Aircraft Procurement, Air Force, BPAC 119992 (Budget Activity 5, P-27 and P-61, PE 0303601F only) (1)	32,902	33,356	36,145	21,120	14,785	129,791	152,914	195,123	TBD
(U)	Other Procurement, Air Force, 'MILSATCOM Space', BPAC 836780 (Budget Activity 3, P-66, PE	15,221	13	18,482	127,749	107,732	88,175	83,925	102,174	TBD
									<u>Cost to Complete</u>	
									Continuing	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303601F MILSATCOM Terminals		PROJECT 2487			
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
0303601F only)										
(1) Spares included										
NOTE: Related RDT&E costs for MILSATCOM satellite systems to which terminal development is linked can be found RDT&E Budget Item Justification Sheets for the following Program Elements (PEs):										
PE 0303110F Defense Satellite Communications System										
PE 0603430F Advanced EHF										
PE 0603845F Advanced Wideband System (AWS)										
PE 0603432F Polar MILSATCOM (Space)										
PE 0603854F Wideband Gapfiller Satellite (Space)										
PE 0604479F Milstar LDR/MDR Satellite Communications										
PE 0604240F B-2 RDT&E										
PE 0101113F B-52 RDT&E										
PE 0305207F RC-135 RDT&E										
PE 0207581F Joint STARS RDT&E										
(U) E. Acquisition Strategy										
The FAB-T contract initiates development of a family of common MILSATCOM terminals to work with next generation space segments including Advanced EHF (AEHF), Wideband Gapfiller Satellite (WGS), and Advanced Polar. In FY03 AF initiates development of High Data Rate (HDR) RF terminals and Lasercom Terminals to operate with Wideband Gapfiller Satellite (WGS) and Transformational Communications satellites. In FY04 AF initiates the development of the Wideband Antenna Program.										
(U) F. Schedule Profile										
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>
Project 2487			Page 4 of 7 Pages				Exhibit R-2 (PE 0303601F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0303601F MILSATCOM Terminals					2487				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U)	FAB-T Development (Contract Award)				*									
(U)	JSTARS development of ABCCC communications capability						X							
(U)	Begin initial development of HDR RF Terminals						X							
(U)	Begin initial development of Lasercom Terminals						X							
(U)	Dual Contract Award for early prototyping for Lasercom terminal									X				
(U)	Wideband Antenna Development										X			
	* Completed event													
	X Planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0303601F MILSATCOM Terminals			2487			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Concept/Prototype Demo/SATCOM testing					3,449		1,047		3,307	
(U)	Ground Multi-band Terminal (GMT)					24,799		3,628		7,077	
(U)	Family of Advanced Beyond-Line-of-Sight Terminals (FAB-T) development					10,503		52,318		96,596	
(U)	Development of ABCCC communication capability for Joint Stars					0		5,550		0	
(U)	High Data Rate (HDR) RF Terminal					0		5,100		31,940	
(U)	Lasercom Terminals					0		3,650		14,401	
(U)	Joint Terminal Engineering Office (JTEO) prior to FY04 funding resided in PEs 0603430F & 0603854F									7,322	
(U)	Wideband Antenna Program					0		0		13,188	
(U)	Total					38,751		71,293		173,831	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon	FPIF/FFP	Jun 85	888,552	888,552	888,552	0	0	0	0	888,552
	Rockwell	CPIF	Aug 93	43,068	43,068	43,068	0	0	0	0	43,068
	ViaSat	C/FFP	Oct 95	3,076	3,076	3,076	0	0	0	0	3,076
	Harris	CPAF	Jun 01	38,100	38,100	5,600	22,446	2,650	5,500	Continuing	TBD
	Boeing Corp	CPAF	Sep 02	266,842	266,842	0	3,670	45,307	89,233	Continuing	TBD
	Miscellaneous	Various	Various	N/A	N/A	652,799	102	0	0	0	652,901
	ESC/JS	AF-616	N/A	N/A	N/A	0	0	5,550	0	0	5,550
	Harris - Assoc.Contract Agreement for HDR/RF Terminal Study	ACA		750	750	0	0	750	0	0	750
Project 2487											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0303601F MILSATCOM Terminals					2487	
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
Boeing - Assoc. Contract	ACA		750	750	0	0	750	0	0	750
Agreement for HDR RF Terminal Study										
TBD (High Data Rate (HDR) RF terminals)	TBD	TBD		N/A	0	0	0	23,128	Continuing	TBD
TBD (Lasercom Terminals)	TBD	TBD		N/A	0	0	0	8,714	Continuing	TBD
TBD (Wideband Antenna Program)	TBD	TBD		N/A	0	0	0	9,814	Continuing	TBD
TBD (MUOS)	TBD	TBD		N/A	0	0	0	0	69,850	69,850
<u>Support and Management Organizations</u>										
MITRE	CPAF	Various	N/A	N/A	110,934	10,043	11,160	17,231	Continuing	TBD
Support Contractors - System Engineering & Technical Assistance	Various	Various	N/A	N/A	161,144	1,590	2,872	12,915	Continuing	TBD
Tecolote (Starting in FY04 these costs will be included in Support Contractor line above)	Various	Various	N/A	N/A	3,013	0	325	0	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	20,575	500	1,629	6,996	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AF Research Lab	AF-616	N/A	N/A	N/A	24,603	0	0	0	Continuing	TBD
Miscellaneous	Various	N/A	N/A	N/A	5,507	400	300	300	Continuing	TBD
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					1,593,095	26,218	55,007	136,389	TBD	TBD
Subtotal Support and Management					295,666	12,133	15,986	37,142	TBD	TBD
Subtotal Test and Evaluation					30,110	400	300	300	TBD	TBD
Total Project					1,918,871	38,751	71,293	173,831	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003														
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)					PROJECT 4689													
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost												
4689	Global Access Architecture	8,843	7,041	7,164	7,310	7,519	7,789	7,899	8,008	Continuing	TBD												
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0												
<p>(U) <u>A. Mission Description</u> Global Air Traffic Management: GATM is the Air Force program designed to meet the evolving aviation requirements of the International Civil Aviation Organization (ICAO). GATM, Navigation and Safety, and Navigation Warfare (NAVWAR) are major components of the AF's Global Access, Navigation, and Safety (GANS) management effort. The Global Air Traffic Operations/Mobility Command and Control (GATO/MC2) System Program Office (SPO) supports GATM as the AF's central focal point for analyzing and evaluating operational requirements, developing aircraft system architectures, acquiring aviation equipment, and certifying weapon system implementation. Per AFPD 63-13, SPO support funds engineering services, acquisition support, and certification of platform integration. The system architectures identify necessary equipment and aircraft capability shortfalls across the Air Force inventory, for mobility, information dominance, bombers, fighters, trainers, helicopters, and unmanned aerial vehicles. For those capabilities where no current solution exists, development activities are undertaken in conjunction with existing DoD communications, navigation, surveillance, and safety program offices. Dual-use capabilities of avionics to satisfy GATM and military requirements of the Air Force fleet will be explored. The SPO will continue projections of studies and prototype efforts necessary to ensure AF aviation weapon systems are postured to meet civil standards and future changes to the civil standards leading to free flight. This project supports the definition of requirements for ACAT III projects across multiple weapon systems. No existing program satisfies the requirements of the GATM initiatives.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$2,524</td> <td>Accomplishment/Planned Program: Continue system architecture definitions, development, and certification</td> </tr> <tr> <td>(U) \$1,484</td> <td>Continue operational requirements analysis, demonstration, and evaluation</td> </tr> <tr> <td>(U) \$2,839</td> <td>Continue development of common avionics and technologies</td> </tr> <tr> <td>(U) \$1,347</td> <td>Continue acquisition of ID/IQ aviation equipment</td> </tr> <tr> <td>(U) \$649</td> <td>Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations</td> </tr> <tr> <td>(U) \$8,843</td> <td>Total</td> </tr> </table>												(U) \$2,524	Accomplishment/Planned Program: Continue system architecture definitions, development, and certification	(U) \$1,484	Continue operational requirements analysis, demonstration, and evaluation	(U) \$2,839	Continue development of common avionics and technologies	(U) \$1,347	Continue acquisition of ID/IQ aviation equipment	(U) \$649	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations	(U) \$8,843	Total
(U) \$2,524	Accomplishment/Planned Program: Continue system architecture definitions, development, and certification																						
(U) \$1,484	Continue operational requirements analysis, demonstration, and evaluation																						
(U) \$2,839	Continue development of common avionics and technologies																						
(U) \$1,347	Continue acquisition of ID/IQ aviation equipment																						
(U) \$649	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations																						
(U) \$8,843	Total																						
Project 4689			Page 1 of 11 Pages				Exhibit R-2 (PE 0305099F)																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)		
		PROJECT 4689		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$2,092	Accomplishment/Planned Program: Continue system architecture definitions, development, and certification			
(U) \$1,154	Continue operational requirements analysis, demonstration, and evaluation			
(U) \$2,364	Continue development of common avionics and technologies			
(U) \$852	Continue acquisition of ID/IQ aviation equipment			
(U) \$579	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U) \$7,041	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>				
(U) \$2,112	Accomplishment/Planned Program: Continue system architecture definitions, development, and certification.			
(U) \$1,159	Continue operational requirements analysis, demonstration, and evaluation			
(U) \$2,388	Continue development of common avionics and technologies			
(U) \$891	Continue acquisition of ID/IQ aviation equipment			
(U) \$614	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U) \$7,164	Total			
(U) <u>B. Budget Activity Justification</u>				
This program upgrades avionics to add air traffic control capabilities to currently fielded weapon systems and is assigned Budget Activity 7, Operational Systems Development.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	9,331	7,200	7,311	TBD
(U) Appropriated Value	9,331	7,200		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-488			
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		0		
d. Below Threshold Reprogram				
e. Rescissions		-159		
Project 4689		Page 2 of 11 Pages		Exhibit R-2 (PE 0305099F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT					
07 - Operational System Development				0305099F Global Air Traffic Management (GATM)			4689					
(U) C. Program Change Summary (\$ in Thousands) Continued												
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2003 PBR					-147						
(U)	Current Budget Submit/FY 2004 PBR			8,843	7,041	7,164		TBD				
(U)	<u>Significant Program Changes:</u>											
(U) D. Other Program Funding Summary (\$ in Thousands)												
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	Aircraft Procurement, AF, BA-5, C-5 Avionics Modernization Program, PE 0401119F	90,531	125,067	80,524	12,062							308,184
(U)	RDT&E, AF, BA-7, C-5 AMP, PE 0401119F, C-5 Airlift Squadrons	64,240	10,030									74,270
(U)	Aircraft Procurement, AF, BA-5, C-5, FM Immunity, PE0401119F											
(U)	Aircraft Procurement, AF, BA-5, C-9 NAVSTAR GPS, PE 0401314F											
(U)	Aircraft Procurement, AF, BA-5, C-9 RVSM, PE 0401314F											
(U)	Aircraft Procurement, AF, BA-5, C-9 TAWS, PE 0401314F											
Project 4689		Page 3 of 11 Pages					Exhibit R-2 (PE 0305099F)					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0305099F Global Air Traffic Management (GATM)					4689	
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement, AF, BA-5, KC-10 NAVSTAR GPS, PE 0401219F										
(U) RDT&E, AF, BA-7, KC-10 GATM, PE 0401219F	22,774	10,584	2,422							35,780
(U) Aircraft Procurement, AF, BA-5, KC-10 GATM, PE 0401219F	15,093	8,163	14,085	1,973						39,314
(U) Aircraft Procurement, AF, BA-5, KC-10 FM Immunity, PE 0401219F										
(U) Aircraft Procurement, AF, BA-5, KC-10 TCAS/TAWS, PE 0401219F										
(U) Aircraft Procurement, AF, BA-5, C-17 HFDL, PE 0401130F	3,128	2,820	7,967	3,651	1,667					19,233
(U) Aircraft Procurement, AF, BA-5, C-17 GPS Integrity Monitoring Capability, PE 0401130F										
(U) Aircraft Procurement, AF, BA-5, C-17 GATM II, PE 0401130F			54,372	57,640	55,089	52,547			29,324	248,972
(U) Aircraft Procurement, AF, BA-5, C-17 RNP-4, PE 0401130F	3,128	2,820	7,967	3,651	1,667					19,233
Project 4689										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689		
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement, AF, BA-5, C-17 TAWS, PE 0401130F	11,701	18,796	5,082							35,579
(U) Aircraft Procurement, AF, BA-5, C-17 GATM PE 0401130F	39,516	30,029								69,545
(U) Aircraft Procurement, AF, BA-5, C-20 TAWS, PE 0401314F										
(U) Aircraft Procurement, AF, BA-5, C-21 TCAS, PE 0401314F										
(U) Aircraft Procurement, AF, BA-5, C-21 TAWS, PE 0401314F										
(U) Aircraft Procurement, AF, BA-5, VC-25 Windshear Warning, PE 0401314F										
(U) Aircraft Procurement, AF, BA-5, VC-25 GATM, PE 0401314F	11,364	11,124	1,780							24,268
(U) Aircraft Procurement, AF, BA-5, VC-25 TAWS, PE 0401314F										
(U) Aircraft Procurement, AF, BA-5, T-43 TCAS, PE 0804742F			1,924	4,910	3,239	55				10,128
Project 4689										

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)			PROJECT 4689			
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement, AF, BA-5, T-43 TAWS, PE 0804742F	3,404	1,868	5,184	2,722						13,178
(U)	Aircraft Procurement, AF, BA-5, C-130 Avionics Modernization Program, PE 0401115F			80,800	180,200	213,600	303,300			1,982,700	2,760,600
(U)	Aircraft Procurement, AF, BA-5, C-130 ETCAS, PE 0401115F	2,105	3,635	250							5,990
(U)	Aircraft Procurement, AF, BA-5, C-135 8.33 radio, PE 0401218F										
(U)	Aircraft Procurement, AF, BA-5, C-135 Interphone replacement, PE 0401218F										
(U)	Aircraft Procurement, AF, BA-5, C-135 GATM, PE 0401218F	91,200	159,307	157,549	151,846	131,427	137,257			125,213	953,799
(U)	Aircraft Procurement, AF, BA-5, C-135 RVSM, PE 0401218F	19,290									19,290
(U)	Aircraft Procurement, AF, BA-5, C-135 TAWS, PE 0401218F	8,788									8,788
(U)	Aircraft Procurement, AF, BA-5, C-135 FDR/CVR, PE	36,504	1,598								38,102
Project 4689											

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689	
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
0401218F										
(U) Aircraft Procurement, AF, BA-5, C-135 Pacer CRAG, PE 0401218F	1,549									1,549
(U) Aircraft Procurement, AF, BA-5, C-135 FM Immunity, PE0401218F										
(U) Aircraft Procurement, AF, BA-5, C-141 TCAS, PE 0401118F										
(U) RDT&E , AF, BA-7, E-3 GATM, PE 0207417F			16,876	66,568	20,429					103,873
(U) Aircraft Procurement, AF, BA-5, E-3 GATM, PE 0207417F					26,515	69,475				95,990
(U) Aircraft Procurement, AF, BA-5, E-4 8.33 radio, PE 0302015F										
(U) Aircraft Procurement, AF, BA-5, E-4 TCAS, PE 0302015F	720									720
(U) Aircraft Procurement, AF, BA-5, E-4 TAWS, PE 0302015F										
(U) RDT&E, AF BA-5, E-4 , INFRASTRUCTURE MODERNIZATION, PE	17,257	9,017	29,351	21,703						77,328
Project 4689										

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT 4689
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(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
0302015F										
(U) Aircraft Procurement, AF, BA-5, E-4 INFRASTRUCTURE MODERNIZATION, PE 0302015F		28,262	20,139	31,883	7,306	17,292				104,882
(U) Aircraft Procurement, AF, BA-5, E-4 FDR/CVR, PE 0302015F	480									480
(U) Aircraft Procurement, AF, BA-5, E-8 GATM, PE 0207581F	8,820			22,632	17,993	24,660				74,105
(U) RDT&E, AF, BA-7, E-8 GATM, PE 0207581F			49,600	63,800	36,300	7,700				157,400
(U) Aircraft Procurement, AF, BA-5, H-1 TCAS, PE 0101235F		292	488							780
(U) Aircraft Procurement, AF, BA-5, B-52, GATM, PE 0101113F					340	51,300			118,800	170,440
(U) RDT&E, AF, BA07, B-52 GATM, PE 0101113F			4,676	15,836	40,000					60,512
(U) Aircraft Procurement, AF, BA-5, C-12 TAWS, PE 0401314F										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)	PROJECT 4689
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(U) E. Acquisition Strategy

The GATM Global Access Architecture acquisition strategy enables the GATO/MC2 SPO to guide equipment acquisition supporting global air traffic operations. The SPO will ensure standardization and certification of USAF platforms/systems that operate in the national and global air traffic environments. The SPO will also provide technical expertise and interface with appropriate product/support centers, battle labs, and Department of Defense (DOD) research and development facilities in the execution of assigned tasks. Program Research and Development Agreements (PRDAs), Cooperative Research and Development Agreements (CRDAs), and Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts will be competitively awarded.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) System Architecture Definitions	*				X				X			
(U) Operational Requirements Analysis	*				X				X			
(U) Development of common avionics and technologies	*				X				X			
(U) Acquisition of ID/IQ equipment	*				X				X			
(U) GPS/NAVWAR Integration Activities	*				X				X			

* Denotes Completed Event for the FY - All GATM activities are on-going level of effort activities
 X Denotes Beginning of scheduled event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305099F Global Air Traffic Management (GATM)			4689		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	System architecture definitions, development, and certification					2,524		2,092		2,112
(U)	Operational requirements analysis, demonstration, and evaluation					1,484		1,154		1,159
(U)	Acquisition of ID/IQ aviation equipment					1,347		852		2,388
(U)	Development of common avionics and technologies					2,839		2,364		891
(U)	Nav/Safety and GPS/NAVWAR integration and interoperability evaluations					649		579		614
(U)	Total					8,843		7,041		7,164
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
MIT	FFP	Nov 98	N/A	N/A	2,420	1,500	1,215	1,175	Continuing	TBD
Honeywell	FFP	Nov 98	N/A	N/A	2,689	240	120	147	Continuing	TBD
Allied Signal	FFP	Nov 98	N/A	N/A	1,975	0	0	0	0	1,975
Rockwell Collins	FFP	Nov 98	N/A	N/A	1,504	0	0	186	Continuing	TBD
MITRE Corporation	CPAF	Oct 99	N/A	N/A	5,188	2,949	2,478	2,455	Continuing	TBD
Horizons Technology Inc	FFP	Feb 99	N/A	N/A	3,974	2,995	2,366	2,327	Continuing	TBD
TASC	CPFF	Jan 99	728	728	728	0			0	728
Smiths Industries	FFP	Apr 00	N/A	N/A	194	0	0	0	Continuing	TBD
SAIC	T&M	Dec 99	N/A	N/A	530	0	0		0	530
ARINC Inc	FFP	July 99	N/A	N/A	946	130	150	150	Continuing	TBD
Lockheed Martin	CPAF	Jun 00	159	159	159	0	0		0	159
Bremmer Associates	FFP	Feb 99	729	729	729	0	0		0	729
Northop Grumman	CPAF	Feb 99	2,499	2,499	2,499	0	0		0	2,499
MCR	IDIQ	Feb	N/A	N/A	750	444	445	454	Continuing	TBD
Project 4689					Page 10 of 11 Pages			Exhibit R-3 (PE 0305099F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305099F Global Air Traffic Management (GATM)				4689		
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
Federal Tech Services	FFP	Aug 99	300	300	300	0	0	0	300	
DISA/DIT	FFP	Sep 00	N/A	N/A	0	0	0	0	Continuing	TBD
Various	various	various	N/A	N/A	2,188	0	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
MITRE Corporation	CPAF	Oct 99	N/A	N/A	761	315	115	120	Continuing	TBD
Various	Various	Various	N/A	N/A	788	210	100	105	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
412th FLTS (Edwards AFB)		Various	N/A	N/A	111	60	52	45	Continuing	TBD
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					26,773	8,258	6,774	6,894	TBD	TBD
Subtotal Support and Management					1,549	525	215	225	TBD	TBD
Subtotal Test and Evaluation					111	60	52	45	TBD	TBD
Total Project					28,433	8,843	7,041	7,164	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305110F Satellite Control Network					PROJECT 3276		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3276	Satellite Control Network	47,378	16,779	18,603	17,880	22,146	18,179	17,939	17,527	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

The Air Force Satellite Control Network (AFSCN) mission is to command and control space systems and to distribute space system information in support of operational DoD missions, National Security, RDT&E programs, and other designated users. The AFSCN also provides launch and early orbit tracking operations in support of all major US launches. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to meet requirements validated by a HQ USAF approved Operational Requirements Document (ORD). This program element contains funds for the development and acquisition of this integrated national satellite telemetry, tracking, commanding, and data relay capability to meet the requirements of the growing inventory of operational and developmental DoD, National, Civil, and Allied satellite systems.

The AFSCN is a global infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provide the highly reliable command and control, communications, and range systems required to support the nation's surveillance, navigation, communications, warning, and weather satellite operations. The AFSCN is the DoD's common user network that provides satellite state-of-health, telemetry, tracking, and commanding (TT&C) for the following operational satellite systems: Defense Meteorological Satellite Program (DMSP), Global Positioning System (GPS), Defense Satellite Communications System (DSCS), Defense Support Program (DSP), Fleet Satellite (FLEETSAT), Military Strategic and Tactical Relay Satellite (MILSTAR), the Navy's Ultra High Frequency Follow-On (UHF F/O), Skynet, NATO III/IV, and classified programs. In addition, it provides launch and early orbit tracking operations in support of all major US launches and is the world's only satellite network equipped with high-power capability necessary for satellite rescue, anomaly resolution, and end-of-life disposal operations.

AFSCN Improvement and Modernization (I&M) is an ongoing program of replacements and upgrades which will meet AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment will enable AFSPC satellite operations to be performed with fewer, less skilled personnel and will significantly reduce hardware/software maintenance costs. The principal efforts within this program are: Communications Upgrades, Range RTS Upgrades, and Network Operations Upgrades.

COMMUNICATIONS UPGRADES: This effort has transitioned the costly point-to-point AFSCN communications network to a distributed communications system that integrates government and commercial networks. Several standardization efforts have been implemented to improve and modernize the communications segment of the AFSCN, including: Wide Area Network Interface Units (WANIU) which standardized hardware, enabled future access to the Defense Information System

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305110F Satellite Control Network	PROJECT 3276
<p>(U) <u>A. Mission Description Continued</u></p>		
<p>Network (DISN) global grid, and provided an Asynchronous Transfer Mode (ATM) interface; and Operational Switch Replacement (OSR) to provide increased capacity, reliability, data quality, and user access. Additionally, efforts to standardize and improve both the Communications and Range segments of the AFSCN that include standards and protocols and external user communications connectivity upgrades continue on the Satellite Control Network Contract (SCNC), and are detailed below in the Range Upgrades segment.</p>		
<p>RANGE UPGRADES: This effort will upgrade the current Automated Remote Tracking Station (ARTS) and other Range assets. Several integrated efforts, which are now grouped into the Remote Tracking Station (RTS) Block Change (RBC) effort, will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government unique equipment with commercial off-the-shelf technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs.</p>		
<p>NETWORK OPERATIONS UPGRADES: These upgrades that include resource scheduling and orbit analysis system follow-on will build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem deliveries to continue and improve AFSCN resource management capabilities.</p>		
<p>(U) <u>FY 2002 (\$ in Thousands)</u></p>		
(U) \$0	Accomplishments/Planned Program	
(U) \$9,295	Communications Upgrades: continued communications upgrades to include completion of OSR and WANIU development efforts.	
(U) \$15,000	Range Upgrades: continued standards protocol development effort. Continued RTS Block Change development effort and system engineering and network integration	
(U) \$8,293	Network Operations Upgrades: continued upgrades to network operations to include development of Orbit Analysis Subsystem follow-on upgrade and system engineering and network integration.	
(U) \$100	Network Integration and Systems Engineering: continued system engineering and predeployment integration and validation of hardware/software to meet evolving satellite program requirements at Operational Control Nodes and RTSs.	
(U) \$10,166	Provided program support for Systems Program Office.	
(U) \$4,524	Reprogramming for higher AF priorities	
(U) \$47,378	Total	
Project 3276	Page 2 of 7 Pages	Exhibit R-2 (PE 0305110F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development		0305110F Satellite Control Network		3276	
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$10,321	Range Upgrades: continue upgrades to include development of standards and protocols/Wide Area Network server/security, interoperability, and RTS Block Change efforts. Continue predeployment system engineering and network integration.			
(U)	\$2,920	Network Operations Upgrades: continue upgrades to network operations to include development of Orbit Analysis Subsystem follow-on upgrade and predeployment system engineering and network integration.			
(U)	\$3,538	Provide program support for Systems Program Office			
(U)	\$16,779	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$9,741	Range Upgrades: continue upgrades to include development of standards and protocols/WAN serv/security, interoperability, and RTS Block Change efforts. Continue predeployment system engineering and network integration.			
(U)	\$5,155	Network Operations Upgrades: continue upgrades to network operations to include development of Resource Scheduling Capacity upgrade, Orbit Analysis Subsystem follow-on, and predeployment system engineering and network integration.			
(U)	\$3,707	Provide program support for Systems Program Office.			
(U)	\$18,603	Total			
(U) <u>B. Budget Activity Justification</u>					
This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	54,539	17,542	19,845	TBD
(U)	Appropriated Value	56,349	17,542		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,810	-685		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram	-3,000	-78		
	d. Below Threshold Reprogram	-3,934			
Project 3276		Page 3 of 7 Pages	Exhibit R-2 (PE 0305110F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305110F Satellite Control Network			PROJECT 3276				
(U) C. Program Change Summary (\$ in Thousands) Continued											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>				<u>Total Cost</u>			
	e. Rescissions	-227									
(U)	Adjustments to Budget Years Since FY 2003 PBR						-1,242				
(U)	Current Budget Submit/FY 2004 PBR	47,378	16,779	18,603				TBD			
(U) Significant Program Changes:											
FY02: Network Integration Contract reduced effort as Satellite Control Network Contract (SCNC) came on line, and Operational Switch Replacement integration at sites was slower than forecast due to operational realities, so available funds were applied to higher AF priorities with acceptable levels of increased risk (-\$4,524K additional reprogramming not reflected in database total above); SCNC winning contractor's approach refined alignment of funds between Remote Tracking Station Block Change (RBC) and Orbit Analysis System (OAS) upgrade.											
FY04: FFRDC/SETA Systems Engineering support for upgrade efforts reduced to support higher Air Force priorities; inflation adjustment.											
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	OPAF, Electronics & Telecom Equipment (BA 03, PE 0305110F, P-64)	28,336	44,627	48,229	44,112	51,574	50,483	55,515	59,796	Continuing	TBD
(U)	OPAF, Initial Spares & Repair Parts (BA 05 PE 0305110F, P-106)	1,518	2,026	4,444	3,184	3,428	3,498	0	0	0	18,098
(U) E. Acquisition Strategy											
The primary objective of the AFSCN I&M program is to reduce the cost of satellite control operations while maintaining or improving reliability, maintainability, operability, and capability of current systems. In Dec 01 the AF further streamlined its acquisition strategy by competitive award of the Satellite Control Network Contract (SCNC), which consolidates development upgrades, sustainment, system engineering, and integration responsibilities in one contract.											
(U) F. Schedule Profile											
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305110F Satellite Control Network					3276				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) COMMUNICATIONS UPGRADES														
(U) - WANIU DD-250		*												
(U) - OSR DD-250						X								
(U) RANGE UPGRADES (RTS Block Change)														
(U) - Begin RTS Block Change (RBC)		*												
(U) - Vandenberg RBC Critical Design Review (CDR)						X								
(U) - Vandenberg RBC Functional Config Audit/ Physical Config Audit											X			
(U) - Transportable RTS CDR							X							
(U) NETWORK OPERATIONS UPGRADES														
(U) - Start OAS follow-on effort		*												
(U) - OAS follow-on CDR							X							
(U) - Start Resource Schedule Capacity upgrade											X			
(U) - Begin integration Transportable RTS core											X			
*=completed; X=planned														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0305110F Satellite Control Network			3276			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Communications Upgrades					9,295		0		0	
(U)	Range Upgrades					15,000		10,321		9,741	
(U)	Network Ops Upgrades					8,293		2,920		5,155	
(U)	Network Integration and Systems Engineering					100		0		0	
(U)	Program Support					10,166		3,538		3,707	
(U)	Identified for reprogramming to higher AF priorities					4,524					
(U)	Total					47,378		16,779		18,603	
(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 Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Additional Reprogramming						4,524				4,524
	<u>Product Development Organizations</u>										
	Lockheed Martin (Range & Comm Development Contract)	C/CPAF	Mar 96	133,846	133,846	124,551	9,295	0	0	0	133,846
	Honeywell Technology Solutions (Satellite Control Network Contract*)	C/CPAF	Dec 01	86,200	86,200	1,098	23,293	13,241	14,896	33,672	86,200
	Lockheed Martin (Network Integration Contract)	C/CPAF	May 96	46,057	46,057	45,957	100	0	0	0	46,057
	*note: EACs include basic contract and options but do not include unpriced, future ECPs										
	<u>Support and Management Organizations</u>										
	Program Support (FFRDC, SETA, SPO Ops)	various	various	N/A	N/A	69,446	10,166	3,538	3,707	Continuing	TBD
Project 3276					Page 6 of 7 Pages			Exhibit R-3 (PE 0305110F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
07 - Operational System Development				0305110F Satellite Control Network		
				February 2003		
				3276		
(U) Performing Organizations Continued:						
<u>Test and Evaluation Organizations</u>						
N/A						
(U) Government Furnished Property:						
	<u>Contract</u>	<u>Award or</u>				
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>
<u>Description</u>	<u>Vehicle</u>					<u>Budget</u>
						<u>FY 2004</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Product Development Property</u>						
N/A						
<u>Support and Management Property</u>						
N/A						
<u>Test and Evaluation Property</u>						
N/A						
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>
						<u>Budget</u>
						<u>FY 2004</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal additional reprogrammings					4,524	4,524
Subtotal Product Development				171,606	32,688	13,241
Subtotal Support and Management				69,446	10,166	3,707
Subtotal Test and Evaluation						
Total Project				241,052	47,378	16,779
						18,603
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305111F WEATHER SERVICE					PROJECT 2738		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2738	Weather Service	10,558	14,095	16,317	16,569	16,715	17,005	25,443	32,284	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 This budget activity funds operational development necessary to acquire, modify, and sustain segments of the Air Force Weather Weapon System (AFWWS). The AFWWS supports worldwide operations of Air Force and Army warfighters, as well as Special Operation Forces (SOF) and other government agencies, by providing observations and forecasts of terrestrial and space weather. The AFWWS provides fixed and transportable equipment supporting the Expeditionary Aerospace Force (EAF) concept with weather observing and forecasting capabilities at in-garrison and deployed locations. Air Force Weather (AFW) programs are aligned under the five core competency areas of Weather Data Collection (WDC), Weather Data Analysis (WDA), Weather Forecasting , Product Tailoring/Warfighter Applications (PT/WA), and Dissemination, described in the AFW Mission Support Plan. Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions.

WDC provides for terrestrial and space environmental sensing including, but not limited to, Observing System 21st Century (OS-21), which provides a range of automated weather observing capabilities at fixed and deployed locations worldwide. WDA provides interoperability for the AFW infrastructure with users and data sources, and includes the assimilation of advanced models, radar, lightning, and satellite data into a single user interface for the timely analysis and production of tailored weather products. Weather Forecasting integrates advanced scientific numerical weather prediction capabilities into the AFW Strategic Center for automated and mission-tailored weather forecast products. Forecasting includes but is not limited to the Cloud Depiction and Forecast System II (CDFS II) which upgrades satellite data processing, cloud depiction and forecasting weather support functions for operational commanders and the national intelligence community. Forecasting also includes the Space Weather Analysis and Forecast System (SWAFS) which provides space environmental support through modernization of software capabilities to meet warfighter requirements. Product Tailoring/Warfighter Applications (PT/WA) provides timely, fine-scale weather products and services to operational commanders for a given Area of Responsibility, and at tactical levels, provides front-line weather information to warfighters in support of combat operations. PT/WA also provides the capability to ingest multiple sources of weather information to provide timely and precisely tailored weather products for the warfighter and supports the 'train as you fight' concept by assuring fixed and deployable systems have a similar look and feel. Weather Dissemination provides for the timely and reliable transmission of weather data and products to intermediate and end users.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		February 2003
PE NUMBER AND TITLE		PROJECT
0305111F WEATHER SERVICE		2738
(U) A. Mission Description Continued		
(U) FY 2002 (\$ in Thousands)		
(U) \$0	Accomplishments/Planned Program	
(U) \$2,576	WDA: Began software development for enhanced analysis capabilities (Analysis)	
(U) \$365	CDFS II: Completed development of cloud depiction and forecast software and achieved FOC (Weather Forecasting)	
(U) \$1,088	Forecasting: Developed and integrated scientific advances in weather prediction capabilities (Weather Forecasting)	
(U) \$2,559	SWAFS: Continued spiral development for incremental deliveries (Weather Forecasting) of space weather prediction capabilities	
(U) \$3,970	PT/WA: Continued software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)	
(U) \$10,558	Total	
(U) FY 2003 (\$ in Thousands)		
(U) \$0	Accomplishments/Planned Program	
(U) \$2,058	WDA: Continue software development and integration of analysis capabilities (Analysis)	
(U) \$2,304	Forecasting: Continue integration of advanced weather forecast capabilities within AFW Strategic Center (Weather Forecasting)	
(U) \$2,686	SWAFS: Continue spiral development for incremental deliveries (Weather Forecasting) of space weather prediction capabilities	
(U) \$7,047	PT/WA: Continue software development and integration of regional and tactical weather systems and integration with warfighter C4I systems (Product Tailoring/Warfighter Applications)	
(U) \$14,095	Total	
(U) FY 2004 (\$ in Thousands)		
(U) \$0	Accomplishments/Planned Program	
(U) \$1,844	WDC: Includes AF participation with National Weather Service and Federal Aviation Administration in Product Improvement Plans for automated weather sensors and the Next Generation Weather Radar.	
(U) \$2,826	WDA: Continues incremental software development and integration of enhanced analysis capabilities (Analysis)	
(U) \$5,034	Forecasting: Continues integration of advanced weather forecast capabilities within AFW Strategic Center and continues spiral development of SWAFS for incremental deliveries (Weather Forecasting)	
(U) \$6,613	PT/WA: Continues software development and integration of regional and tactical weather systems and integration with warfighter C4I systems (Product Tailoring/Warfighter Applications)	
(U) \$16,317	Total	
Project 2738	Page 2 of 6 Pages	Exhibit R-2 (PE 0305111F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003																																																									
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305111F WEATHER SERVICE			PROJECT 2738																																																								
<p>(U) <u>B. Budget Activity Justification</u> This effort is in Budget Activity 7, Operational System Development, because it supports operational software development and system tests associated with the upgrade and replacement of currently operational systems, systems already in production, and systems with approved production funds in the DoD budget.</p>																																																																
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:55%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">11,202</td> <td style="text-align: right;">14,488</td> <td style="text-align: right;">16,617</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">11,452</td> <td style="text-align: right;">14,488</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: right;">-250</td> <td style="text-align: right;">-250</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-313</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-143</td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-280</td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: right;">-51</td> <td></td> <td style="text-align: right;">-300</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">10,558</td> <td style="text-align: right;">14,095</td> <td style="text-align: right;">16,317</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Not Applicable</p>											<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	11,202	14,488	16,617	TBD	(U) Appropriated Value	11,452	14,488			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-250	-250			b. Small Business Innovative Research	-313				c. Omnibus or Other Above Threshold Reprogram		-143			d. Below Threshold Reprogram	-280				e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR	-51		-300	TBD	(U) Current Budget Submit/FY 2004 PBR	10,558	14,095	16,317	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																												
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<p>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>FY 2005</u></th> <th style="text-align: right;"><u>FY 2006</u></th> <th style="text-align: right;"><u>FY 2007</u></th> <th style="text-align: right;"><u>FY 2008</u></th> <th style="text-align: right;"><u>FY 2009</u></th> <th style="text-align: right;"><u>Cost to</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> <tr> <td></td> <th style="text-align: right;"><u>Actual</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Estimate</u></th> <th style="text-align: right;"><u>Complete</u></th> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other Procurement, AF, Weather Service (PE35111F WSC 833070, 838010, and 86190A)</td> <td style="text-align: right;">37,834</td> <td style="text-align: right;">39,770</td> <td style="text-align: right;">43,250</td> <td style="text-align: right;">45,293</td> <td style="text-align: right;">45,262</td> <td style="text-align: right;">46,192</td> <td style="text-align: right;">57,146</td> <td style="text-align: right;">61,752</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table>											<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) Other Procurement, AF, Weather Service (PE35111F WSC 833070, 838010, and 86190A)	37,834	39,770	43,250	45,293	45,262	46,192	57,146	61,752	Continuing	TBD																						
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>																																																							
(U) Other Procurement, AF, Weather Service (PE35111F WSC 833070, 838010, and 86190A)	37,834	39,770	43,250	45,293	45,262	46,192	57,146	61,752	Continuing	TBD																																																						
<p>(U) <u>E. Acquisition Strategy</u> All major contracts within this program used precompeted DoD contract vehicles or were awarded after full and open competition. Programs support DII COE compliance and use an evolutionary acquisition strategy with a series of incremental IOCs and software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to evolving commercial activities.</p>																																																																
Project 2738			Page 3 of 6 Pages				Exhibit R-2 (PE 0305111F)																																																									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305111F WEATHER SERVICE					2738				
(U) F. Schedule Profile														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Weather Data Collection begin development											X			
(U) CDFS II FOC			*											
(U) Forecasting spiral 1 IOC						X								
(U) Forecasting spiral 2 begin development							X							
(U) Forecasting spiral 2 IOC												X		
(U) Forecasting spiral 3 begin development										X				
(U) WDA increment 1 begin development			*											
(U) WDA increment 1 IOC								X						
(U) WDA increment 2 begin development						X								
(U) WDA increment 2 IOC												X		
(U) SWAFS Spiral 1 IOC				*										
(U) SWAFS Spiral 2 begin development					*									
(U) PT/WA bridge contract award					*									
(U) PT/WA recompeted contract award											X			
* - Denotes completed event														
X - Denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305111F WEATHER SERVICE			2738		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	System Software Integration					841		1,366		1,832
(U)	System Engineering Support					401		272		2,234
(U)	Contractor Engineering Support					919		1,562		2,020
(U)	Software Development					7,116		9,386		8,277
(U)	Travel					208		210		237
(U)	Program Management Support					1,023		1,299		1,717
(U)	Laboratory Support					50				
(U)	Total					10,558		14,095		16,317
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Sterling	CPAF	Jun 95	25,933	25,933	25,568	365	0	0	0	25,933
CCPL GSA	LOE	Mar 00	15,055	15,055	5,756	3,224	6,075	0	Continuing	TBD
(GD/TRW/Raytheon)										
Coastal Environmental	C/IDIQ	Aug 01	2,321	2,321	441	0	0	0	Continuing	TBD
NGIT	CPFF	May 02	11,984	11,984	0	3,138	3,989	4,857	Continuing	TBD
TBD [PT/WA]	CPFF	Dec 03	5,865	5,865	0	0	0	5,360	Continuing	TBD
CCPL (TRW/Raytheon)	LOE	Dec 99	14,856	14,856	8,905	2,149	2,250	1,552	Continuing	TBD
AFRL	LOE	Sep 00	339	339	239	50	0	0	Continuing	TBD
TBD [WDC]	CPFF	Feb 04	500	500	0	0	0	350	Continuing	TBD
NWS	MIPR	Jan 04	1,338	1,338	0	0	0	1,314	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305111F WEATHER SERVICE			PROJECT 2738	
(U) <u>Performing Organizations Continued:</u>								
<u>Support and Management Organizations</u>								
Electronic Systems Center (ESC)			1,301	1,061	503	646	Continuing	TBD
Space and Missile Systems Center (SMC)			1,252	170	164	238	Continuing	TBD
MITRE/Aerospace/ITSP			5,594	401	1,114	2,000	Continuing	TBD
<u>Test and Evaluation Organizations</u>								
Not Applicable								
(U) <u>Government Furnished Property:</u>								
	<u>Contract Method/Type</u>	<u>Award or</u>						
	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Item</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Description</u>								<u>Total</u>
<u>Product Development Property</u>								
Not Applicable								
<u>Support and Management Property</u>								
Not Applicable								
<u>Test and Evaluation Property</u>								
Not Applicable								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development				40,909	8,926	12,314	13,433	TBD
Subtotal Support and Management				8,147	1,632	1,781	2,884	TBD
Subtotal Test and Evaluation				0	0	0	0	0
Total Project				49,056	10,558	14,095	16,317	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)	PROJECT 3587
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3587 Air Traffic Control Systems	25,075	9,614	10,622	5,886	5,944	6,046	6,135	6,218	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

This project funds research and development of new air traffic control surveillance, positioning, and precision approach capabilities (including the Mobile Approach Control System (MACS) which replaces non-standard, unsupportable, large footprint mobile radar approach systems with a common, easily-transportable system for both the Air National Guard and USAF). This project funds the development of a replacement system for automated development of terminal instrument procedures (the precisely-measured information that tells pilots how to fly during final approach to avoid obstacles). This project is also key to ensuring Air Force Air Traffic Systems work collaboratively to safely and efficiently provide ATC services within the National Airspace System (NAS) and in host nations overseas. For example, over the next 15 years, the FAA plans to implement new or improved capabilities into the NAS in an evolutionary manner. FY 2004-2009 will concentrate on deployment of the next generation of communications, navigation, and surveillance (CNS) technologies and the automation upgrades necessary to accommodate them. FY 2010-2015 will see additional capabilities being added to enable the concept of Free Flight throughout the NAS. Since the Air Force must provide the same level of air traffic service to the military and flying public, funds are required to conduct interoperability and architecture studies and analyses as necessary on a wide range of aviation concepts. This effort complements similar activities associated with other safety of flight and airspace access programs such as Global Air Traffic Management that predominantly focus on aircraft issues.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Programs
- (U) \$8,849** Continued Mobile Approach Control System (MACS) Airport Surveillance Radar (ASR) and operations shelter development
- (U) \$14,178** Continued MACS Precision Approach Radar (PAR) development
- (U) \$799** Completed development of Air Force Terminal Instrument Procedures System - Replacement (AFTERPS-R)
- (U) \$1,249** Continued support for all ATCALs Projects
- (U) \$25,075** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)	PROJECT 3587																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$4,189 Complete MACS ASR and operations shelter development</p> <p>(U) \$4,198 Continue MACS PAR development</p> <p>(U) \$1,227 Continue support for all ATCALs projects</p> <p>(U) \$9,614 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$4,747 Complete MACS PAR development</p> <p>(U) \$1,275 Continue support for all ATCALs Projects</p> <p>(U) \$4,600 Begin ATCALs pre-planned product improvement (P3I)</p> <p>(U) \$10,622 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in budget activity 7, Operational System Development, because it upgrades currently fielded weapon systems.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">26,595</td> <td style="text-align: right;">9,865</td> <td style="text-align: right;">5,875</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">26,982</td> <td style="text-align: right;">9,865</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-387</td> <td style="text-align: right;">-50</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-737</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-660</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td style="text-align: right;">-104</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: right;">-123</td> <td style="text-align: right;">-97</td> <td style="text-align: right;">4,747</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">25,075</td> <td style="text-align: right;">9,614</td> <td style="text-align: right;">10,622</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	26,595	9,865	5,875		(U) Appropriated Value	26,982	9,865			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-387	-50			b. Small Business Innovative Research	-737				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-660				e. Rescissions		-104			(U) Adjustments to Budget Years Since FY 2003 PBR	-123	-97	4,747		(U) Current Budget Submit/FY 2004 PBR	25,075	9,614	10,622	TBD
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Project 3587	Page 2 of 6 Pages	Exhibit R-2 (PE 0305114F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					0305114F Air Traffic Control/Approach/Landing System (ATCALs)					3587		
(U) F. Schedule Profile Continued												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Complete development of AFTERPS-R											
	*											
(U)	Complete MACS ASR operations shelter development											
								X				
(U)	Complete MACS PAR development											
									X			
(U)	Begin ATCALs P3I											
										X		
(U)	Contract Milestones											
(U)	MACS PAR contract award											
			*									
(U)	ASR/OPS operational testing											
						X						
(U)	PAR operational testing											
							X					
(U)	ATCALs P3I contract award											
										X		
X Denotes a planned event												
* Denotes a completed event												
Project 3587				Page 4 of 6 Pages				Exhibit R-2 (PE 0305114F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)	PROJECT 3587
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) MACS ASR and Operation Shelter development	8,534	3,669	
(U) MACS PAR development	13,906	3,599	3,288
(U) Studies/field/integration activities to support on-going air traffic control	585	920	2,175
(U) AFTERPS-R development	801	0	0
(U) Government Program Management Support and Travel for ATCALs activities	1,249	1,426	1,623
(U) MACS P3I			3,536
(U) Total	25,075	9,614	10,622

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
AFTERPS-R - Canadian Commercial Corp	FPAF	Apr 01	N/A	N/A	2,450	403	0	0	0	2,853
ASR and Operational Shelter Development - ITT Gilfillan	FPAF	Oct 00	N/A	N/A	29,823	7,920	838	0	Continuing	TBD
MITRE Corp	FFP	Oct 00	N/A	N/A	1,407	1,555	1,565	1,677	Continuing	TBD
MCR Federal Inc.	FFP	Apr 99	N/A	N/A	550	114	117	121	Continuing	TBD
ACS		June 02	N/A	N/A	0	1,235	1,145	1,732	Continuing	TBD
Various	Multiple	Multiple	Continuing	Continuing	2,765	983	680	823	Continuing	TBD
MACS Precision Approach Radar (PAR) Development	FFP	Jan 02	N/A	N/A	11,959	3,549	4,943	4,943	Continuing	TBD
<u>Support and Management Organizations</u>										
Various	Multiple	Multiple	Continuing	Continuing	523	574	535	787	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0305114F Air Traffic Control/Approach/Landing System (ATCALs)					3587
(U) Performing Organizations Continued:										
<u>Test and Evaluation Organizations</u>										
46th Test Wing, Eglin AFB	PO	Multiple	N/A	N/A	787	332	1,185	539	Continuing	TBD
FL										
(U) Government Furnished Property:										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					36,995	24,169	7,894	9,296	TBD	TBD
Subtotal Support and Management					523	574	535	787	TBD	TBD
Subtotal Test and Evaluation					787	332	1,185	539	TBD	TBD
Total Project					38,305	25,075	9,614	10,622	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305128F Security And Investigative Activities					PROJECT 1931		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
1931	TECH SURVEIL COUNTER MEAS EQPT		439	469	474	485	489	498	504	511	Continuing	TBD
Quantity of RDT&E Articles			0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u></p> <p>Air Force Office of Special Investigations (AFOSI) conducts specialized investigative activities and force protection support for Air Force (AF) commanders worldwide. This assists AF commanders in protecting their people and resources. AFOSI's mission includes investigating criminal matters affecting AF personnel, contract fraud and economic crimes involving AF weapons systems and spare parts, the investigation of environmental crime, counterdrugs, computer intrusion detection and forensic media analysis of computer crimes. This element supports Technical Surveillance Countermeasures (TSCM), Computer Crime Investigations (CCI), and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission conducts counterintelligence investigations for both AF and DoD facilities and programs in order to deter and detect technical surveillance operations conducted by Foreign Intelligence Services to compromise classified or sensitive information. The purpose of CCI research is to improve AF and DoD Information Operations capability by enhancing AFOSI's ability to deter or prevent spies, hackers, or saboteurs from manipulating, damaging, or stealing sensitive war fighting data or systems. Failing that, to investigate, identify, and prosecute those who do. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology.</p> <p>The equipment required to provide technical support to investigations is unique and complex. This equipment must be continually updated to provide state-of-the-art capabilities to detect and neutralize criminal activities targeted against the AF and DoD. In an era of advancing technology, reduced manning, and increasingly high level fraud, environmental crime and computer crime investigations, technical investigative equipment must be continuously updated to enable AFOSI special agents to have the most cost effective and best possible means of thwarting criminal acts. The evolution of a new wave of computer crimes has made AFOSI responsible for the collection, investigative analysis, national level law enforcement coordination, and dissemination of hacker activity and intrusion incidents for the Air Force. AFOSI's computer crime equipment must stay on the leading edge of technology to collect criminal information as well as pursue and apprehend criminals through a global medium. AFOSI must continually update its existing high tech computer surveillance equipment to support ongoing and future investigative operations to identify hackers and hacker groups, as well as potential hostile government activities targeting Air Force communication and control systems.</p> <p>Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys cost-effective solutions. The intent is to provide an Air Force-wide review of current infrastructure vulnerabilities; prioritize AF protection planning and integrate with existing programs; identify gaps based on AF needs; direct studies to refine AF requirements.</p>												
Project 1931			Page 1 of 5 Pages					Exhibit R-2 (PE 0305128F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																														
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0305128F Security And Investigative Activities	PROJECT 1931																																													
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$429 Continue development of Computer Crimes Investigative (CCI) Equipment and Software</p> <p>(U) \$10 Testing of Heavy Armored Vehicles in conjunction with the U.S. Armor Working Group</p> <p>(U) \$439 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$56 Next generation Technical Surveillance Countermeasures (TSCM) receiver.</p> <p>(U) \$413 Continue development of Computer Crimes Investiative (CCI) Equipment. and Software.</p> <p>(U) \$469 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$374 Continue development of Computer Crimes Investigative (CCI) Equipment and Software.</p> <p>(U) \$100 Next Generation TSCM receiver Continuing Development</p> <p>(U) \$474 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in Budget Activity 7, Operational System Development, because its products are primarily for use in investigative activity of an operational nature.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">439</td> <td style="text-align: center;">469</td> <td style="text-align: center;">474</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">439</td> <td style="text-align: center;">469</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	439	469	474	TBD	(U) Appropriated Value	439	469			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																												
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Project 1931		Page 2 of 5 Pages																																														
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February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305128F Security And Investigative Activities	PROJECT 1931
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(U) C. Program Change Summary (\$ in Thousands) Continued

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Adjustments to Budget Years Since FY 2003 PBR				
(U) Current Budget Submit/FY 2004 PBR	439	469	474	TBD

(U) Significant Program Changes:

(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to Complete</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>Estimate</u>		
(U) Other Procurement/Technical Surveillance Countermeasures Equipment 3080/PE 846030	4,185	4,018	3,998	4,055	4,072	4,014	4,088	4,154	Continuing	
(U) Other Procurement/Heavily Armored Vehicle 3080/PE 821700	600	460	243	242	241	241	246	250	Continuing	

(U) E. Acquisition Strategy

Market Research is accomplished jointly within the DoD, Counterintelligence, and Law Enforcement communities with the various government laboratories and major defense contractors to identify locations with the ability to develop investigative tools unique to our mission needs, these technologies, capabilities, and limitations of current and future investigative tools is sometimes highly sensitive or classified.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TSCM Receiver						X				X		
(U) Armored Vehicle Testing		X		*								
(U) CCI Software/Equipment		X		*		X				X		

* = completion, X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305128F Security And Investigative Activities			1931		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	TSCM Receiver				0		56			100
(U)	Armored Vehicle Testing				10		0			0
(U)	CCI Software/Equipment				429		413			374
(U)	Total				439		469			474
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
AF Infrastructure Protection Studies					1,992				Continuing	TBD
<u>Product Development Organizations</u>										
Sandia Natl Lab	MIPR	Jun 02	N/A	N/A	1,376	60	163	150	Continuing	TBD
AFWIC	MIPR	Mar 02/Aug 02	N/A	N/A	300	369	250	224	Continuing	TBD
Other Agency	MIPR	TDB	N/A	N/A	205	0	56	100	Continuing	TBD
<u>Support and Management Organizations</u>										
None										
<u>Test and Evaluation Organizations</u>										
US Armor Working Group	MIPR	May 02	10	10	0	10	0	0	0	10
(U) Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305128F Security And Investigative Activities			PROJECT 1931	
(U) Government Furnished Property Continued:								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
AF Infrastructure Protection Studies				1,992				TBD
Subtotal Product Development				1,881	429	469	474	TBD
Subtotal Support and Management								
Subtotal Test and Evaluation				0	10	0	0	0
Total Project				3,873	439	469	474	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305144F TITAN SPACE LAUNCH VEHICLES						PROJECT 4135	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4135	Titan II/IV	16,947	0	0	0	0	0	0	0	0	3,006,164
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

National security requirements dictate a continuing, highly reliable means of placing critical satellites into required orbits. The Titan IV program provides the capability to launch the largest of these satellites into near-earth or geosynchronous orbits from either the East or West Coast launch facilities. Titan IV is used to launch Air Force, National Reconnaissance Office (NRO), and NASA payloads. This program provides several different configurations of the Titan IV including No Upper Stage (NUS), Inertial Upper Stage (IUS), and Centaur. In addition, the Titan IV program developed a new vehicle configuration, the Titan IVB, with solid rocket motor upgrade (SRMU), new avionics and ground support equipment to meet reliability and increased performance requirements. This program provides continuing integration support to the payload community as well as engineering support to maintain system characterization and reliability. The program also continuously evaluates and improves upper stage reliability, cost effectiveness, and responsiveness; supports redesign and disposition of aging spares and facilities which are no longer manufactured or available; investigates flight anomalies; and conducts small studies to assist in defining future upper stages.

Since FY94, this program element also included funding for sustaining engineering, payload integration, and government costs for the Titan II space launch vehicle. Since FY96, program office support efforts have been funded with procurement dollars.

Beginning in FY00, the remaining Inertial Upper Stage Program (PE 0305138F) funds transferred into the Titan program to provide consolidated acquisition of the IUS to support the launch of Defense Support Program (DSP) satellites. IUS is an upper stage on the Titan IV (can be modified for Shuttle) and delivers the DSP satellite to its required orbit.

NOTE: Titan IV / Milstar 6 and Titan II / Coriolis Space Test Program missions previously manifested in FY02 have moved into FY03 due to satellite delays and unavailability of launch ranges -- integration will be finished in FY03 with FY02 funding.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305144F TITAN SPACE LAUNCH VEHICLES	PROJECT 4135
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(U) **A. Mission Description Continued**

(U) FY 2002 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$15,154	Completed Milstar 5 integration, continued Milstar 6 integration
(U) \$1,793	Continued Titan II / Coriolis Space Test Program mission integration
(U) \$0	No Activity
(U) \$16,947	Total

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$0	No new activity planned (see FY02 description)
(U) \$0	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$0	No Activity
(U) \$0	Total

(U) **B. Budget Activity Justification**

This PE is in Budget Activity 7, Operational Systems Development, because Titan II, Titan IV and the Inertial Upper Stage are in production and are operational vehicles.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	21,080			3,010,510
(U) Appropriated Value	21,293			
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-301			
b. Small Business Innovative Research	-1,277			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-2,768			
e. Rescissions				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003								
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT							
07 - Operational System Development				0305144F TITAN SPACE LAUNCH VEHICLES				4135							
(U) C. Program Change Summary (\$ in Thousands) Continued															
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2003 PBR														
(U)	Current Budget Submit/FY 2004 PBR			16,947						3,006,164					
(U)	<u>Significant Program Changes:</u>														
	Titan IV / Milstar 6 and Titan II / Coriolis Space Test Program missions previously manifested in FY02 have moved into FY03 due to satellite delays and unavailability of launch ranges -- integration finished in FY03 with FY02 funding.														
(U) D. Other Program Funding Summary (\$ in Thousands)															
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>					
(U)	MPAF, Space Programs, (BA 05, PE 0305144F, P-27)	253,240	288,687	91,499	74,697	71,361	30,980	0	0	0	810,464				
	Note: during FY03 Congressional deliberations, appropriators rescinded full funding of the Titan contract closeout. This resulted in a reduction of \$93.6 million (FY01) and \$87.7 million (FY02) to the Titan program.														
(U) E. Acquisition Strategy															
	The program has implemented a revised acquisition strategy for the 39-vehicle program. During FY1996, Titan IV transitioned from the old '85-C-0019' development/production and payload integration contract to new contracts designed to improve cost accountability, correct contract discrepancies, and establish an overall programmatic view for the effort to complete the program. The new contracts combined Titan II and Titan IV production, storage, pad maintenance and deactivation, launch operations, anomaly resolution, development and hardware requalification, payload integration, and program studies to provide the greatest potential for cost savings by maximizing use of resources and eliminating duplicative processes.														
(U) F. Schedule Profile															
					<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>			
				1	2	3	4	1	2	3	4	1	2	3	4
(U)	Milstar 5 and Milstar 6 launches				*				X						
(U)	Titan II launch (STP/Coriolis, Jan 03 and DMSP F-16, May 03)								*	X					
	*completed event X planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305144F TITAN SPACE LAUNCH VEHICLES	PROJECT 4135
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Contract Costs Unified Payload Integration	16,947	0	0
(U) Total	16,947	0	0

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
---------------------------------	--	---------------------------------	--------------------------------	---------------------------	-------------------------------	-----------------------	-----------------------	-----------------------	---------------------------	----------------------

Product Development Organizations

LMC 85-C-0019*	SS/FPIF	1QFY85	11,203,100	11,203,100	2,042,016	0	0	0	0	2,042,016
LMC 85-C-0085**	SS/FPIF	1QFY85	678,715	678,715	72,504	0	0	0	0	72,504
LMC 92-C-0028**	SS/CPAF	3QFY92	515,251	515,251	93,428	0	0	0	0	93,428
LMC 96-C-0035	SS/CPAF	3QFY96	232,923	229,304	225,758	0	0	0	0	225,758
LMC 98-C-0005***	SS/CPAF	1QFY98	257,381	256,829	62,705	16,947	0	0	0	79,652
Facilities	n/a	n/a			6,993	0	0	0	0	6,993

NOTE: EAC are total contract values while funding values are AF funds only

* Contract closed

** Contracts inactive

*** Includes both RDT&E and Procurement funding

Support and Management Organizations

Tecolote, SRS, TRW, Antioch			N/A	N/A	101,557	0	0	0	0	101,557
Other Research & Dev.			N/A	N/A	33,068	0	0	0	0	33,068
Aerospace			N/A	N/A	188,367	0	0	0	0	188,367
Other Prgm Supprt			N/A	N/A	162,821	0	0	0	0	162,821

Test and Evaluation Organizations

None

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305144F TITAN SPACE LAUNCH VEHICLES			PROJECT 4135		
(U) Government Furnished Property:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				2,503,404	16,947	0	0	0	2,520,351
Subtotal Support and Management				485,813	0	0	0	0	485,813
Subtotal Test and Evaluation									
Total Project				2,989,217	16,947	0	0	0	3,006,164

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305148F AF Tac Measurement & Sign					PROJECT 5053	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5053	ARGUS	0	15,259	7,510	15,826	4,087	2,815	3,027	3,067	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> This program encompasses development of the Advanced Remote Ground Unattended Sensor (ARGUS). ARGUS provides joint forces and other commanders with Intelligence, Surveillance & Reconnaissance (ISR) derived information for Intelligence Preparation of the Battlespace (IPB) on mobile Time Critical Targets (TCTs) autonomously in near real-time. In addition it will provide cueing for wide area sensors on other ISR platforms such as the Joint Surveillance Target Attack Radar System (JSTARS), Predator, U-2, Global Hawk, or the Multi-sensor Command and Control Aircraft (MC2A). ARGUS is designed for 24/7 operations in support of worldwide geographic and climate conditions and can be air-delivered or hand-emplaced. Each sensor is self-contained with internal battery power, 2-way satellite communication transceiver, sensor suite, signal processing, and Global Positioning System. ARGUS will be carried by the F-15E, and will be designed to satisfy requirements of the Marine Corps Tactical Remote Sensor Systems (TRSS) program, delivered by F/A-18.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$5,236 Concept and Technology Development (U) \$6,138 System Development and Demonstration (U) \$3,685 Test Support (U) \$200 Simulation Support (U) \$15,259 Total</p>											
Project 5053			Page 1 of 5 Pages				Exhibit R-2 (PE 0305148F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305148F AF Tac Measurement & Sign	PROJECT 5053																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$2,186 Concept and Technology Development</p> <p>(U) \$2,824 System Development and Demonstration</p> <p>(U) \$500 Simulation Support</p> <p>(U) \$2,000 Test Support</p> <p>(U) \$7,510 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 7, Operational Systems Development, because it addresses development and capabilities to support already operational weapon systems.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">6,486</td> <td style="text-align: center;">10,449</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td style="text-align: center;">15,486</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td style="text-align: center;">-163</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td style="text-align: center;">-64</td> <td style="text-align: center;">-2,939</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td></td> <td style="text-align: center;">15,259</td> <td style="text-align: center;">7,510</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	6,486	10,449	TBD	(U) Appropriated Value		15,486			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-163			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR		-64	-2,939		(U) Current Budget Submit/FY 2004 PBR		15,259	7,510	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	0	6,486	10,449	TBD																																																					
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(U) Current Budget Submit/FY 2004 PBR		15,259	7,510	TBD																																																					
Project 5053	Page 2 of 5 Pages	Exhibit R-2 (PE 0305148F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305148F AF Tac Measurement & Sign	PROJECT 5053
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(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other Procurement, AF (3080)	0	0	0	0	9,331	9,946	10,132	10,310		39,719
(U) O&M, AF (3400)	0	0	0	0	2,318	3,258	3,315	3,376		12,267

(U) E. Acquisition Strategy

ARGUS began as an ACTD and the new system will build on that. Proposals will be solicited for development and prototype design through open and competitive bid contract, type cost plus award fee with incentives. ARGUS will be developed and procured using spiral development in order to achieve operational utility in the minimal timeframe. ARGUS will leverage existing advanced Government work where feasible, and other Non-Developmental Items (NDI) to the maximum extent possible. Procurement of production models is planned to use a Firm Fixed Price (FFP) contract structure.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Start	*											
(U) Milestone B						X						
(U) SDD Contract Award									X			
(U) Begin Spiral 1 Development							X					
(U) Ballistics Testing									X			
(U) Begin Spiral 2 Development										X		
(U) Initial OT&E										X		
(U) Complete Spiral 1 Development										X		
(U) Complete Spiral 2 Development												X

Note: * denotes completed event, X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305148F AF Tac Measurement & Sign			PROJECT 5053			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Test					0		3,885		2,500	
(U)	Engineering					0		10,294		4,010	
(U)	Management					0		1,080		1,000	
(U)	Total					0		15,259		7,510	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	TBD	TBD	TBD	N/A	N/A	0	0	10,294	4,010	Continuing	TBD
	<u>Support and Management Organizations</u>										
	ESC/SR	TBD	TBD	N/A	N/A	0	0	1,080	1,000	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	TBD	TBD	TBD	N/A	N/A	0	0	3,885	2,500	Continuing	TBD
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305148F AF Tac Measurement & Sign		5053	
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	0	10,294	4,010	TBD	TBD
Subtotal Support and Management	0	0	1,080	1,000	TBD	TBD
Subtotal Test and Evaluation	0	0	3,885	2,500	TBD	TBD
Total Project	0	0	15,259	7,510	TBD	TBD

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BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
07 - Operational System Development		0305160F Defense Meteorological Satellite Program								4758	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4758 DMSP Program	12,838	3,816	918	0	0	0	0	0	0	897,479	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

(U) A. Mission Description

The Defense Meteorological Satellite Program (DMSP) is a fully operational program supporting all military services. Operational commanders require timely, quality weather information to effectively employ weapon systems and protect DoD resources. DMSP is the DoD's most important and often the only source of global weather data to support US military operations. It provides visible and infrared cloud cover imagery (1/3 nautical miles (nm) constant resolution) and other meteorological, oceanographic, land surface, and space environmental data. At least two satellites are required in sun-synchronous, 450nm polar-orbit at all times (sun-synchronous means the satellites cross the equator at the same local sun time on each of their 14 orbits/day). DMSP F-15 was the first Block 5D3 satellite (with legacy sensors) and was launched on a Titan-II booster in Dec 99. DMSP F-16 is the first 'full-up' Block 5D3 (spacecraft bus plus sensors) and will be the last DMSP to launch on a Titan-II booster. The F-16 launch is currently planned for May 03. The remaining DMSP satellites, F-17 through F-20, are all manifested to launch on an Evolved Expendable Launch Vehicle (EELV) booster.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$9,009 Continued system integration and test, studies, and related support activities
- (U) \$2,351 Continued EELV interface design (transition to EELV)
- (U) \$1,478 Continued 5D3 Sensor calibration and validation
- (U) \$12,838 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$2,121 Continue system integration and test, studies, and related support activities
- (U) \$335 Complete EELV interface design (transition to EELV)
- (U) \$1,360 Continue 5D3 Sensor calibration and validation
- (U) \$3,816 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program	PROJECT 4758
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(U) **A. Mission Description Continued**

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$511	Complete RDT&E portion of system integration and test
(U) \$307	Complete 5D3 Sensor calibration and validation
(U) \$100	Complete related support activities
(U) \$918	Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 7, Operational Systems Development, because it supports the current operational DMSP constellation.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	12,901	3,875	2,223	897,617
(U) Appropriated Value	12,259	3,875		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-451	-42		-105
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-17		
d. Below Threshold Reprogram	1,030			-17
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR			-1,305	-16
(U) Current Budget Submit/FY 2004 PBR	12,838	3,816	918	897,479

(U) **Significant Program Changes:**

Funding: \$1.030M required in FY2002 for completion of the design effort to accommodate the change in booster from Titan II to EELV.

\$7.751M of FY04-07 RDT&E funds for system integration, test, and studies Zero Balance Transferred to Missile Procurement (Project 23DMSP) to align the funds in the correct appropriation consistent with the intended use of the funds.

Schedule: Next satellite launch (F-16) planned for May 03 (previously scheduled for 2QFY02). Schedule slip was caused by mutiple technical problems with the

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT				
07 - Operational System Development					0305160F Defense Meteorological Satellite Program				4758				
(U) C. Program Change Summary (\$ in Thousands) Continued													
(U) Significant Program Changes Continued: satellite sensors.													
Technical: None													
(U) D. Other Program Funding Summary (\$ in Thousands)													
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
(U) Missile Procurement/PE 0305160F (Budget Activity 5, Line Item P-22) Related RDT&E: PE 0603434F, National Polar-orbiting Operational Environmental Satellite System (NPOESS) PE 0305160N, Navy Meteorological and Oceanographic Sensor-Space (METOC) (provides funds for Navy unique studies)	42,649	59,597	68,026	63,805	73,529	68,574	71,413	66,257	150,104	2,701,936			
(U) E. Acquisition Strategy Support and services contracts for the spacecraft, sensors, ground systems, and supporting software have been awarded to various contractors. No major milestone decisions remain. Production of DMSP satellites has been completed. Remaining effort is to continue spacecraft and sensor integration and test and successfully launch remaining DMSP satellites.													
(U) F. Schedule Profile													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) F-16 Satellite Launch								X					
(U) Completion of EELV interface design								X					
(U) F-17 Satellite Launch												X	
* = Completed event X = Planned event													
Project 4758			Page 3 of 6 Pages				Exhibit R-2 (PE 0305160F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0305160F Defense Meteorological Satellite Program			4758				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Launch Vehicle Transition					3,050		711			
(U)	Spacecraft Integration and Test					2,604		926		511	
(U)	Sensor Suite Calibration/Validation					1,478		1,360		307	
(U)	Systems Engineering Support					3,530		819		100	
(U)	Program Management Support					2,176					
(U)	Total					12,838		3,816		918	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
Lockheed -Martin	SS/CPAF	Apr 92	3,764	3,764	3,764				0	3,764	
Lockheed-Martin	SS/CPAF	May 97	11,261	11,261	8,923	3,914	547	511		13,895	
Northrop-Grumman (CSS&S)	SS/CPAF	May 95	12,906	12,906	11,214	1,041	714			12,969	
Lockheed-Martin	C/CPAF	Oct 88	39,513	39,513	39,513				0	39,513	
Harris (SSMIS/STT SW)	C/CPAF	Jun 94	8,617	8,617	8,617				0	8,617	
Det 11/GSA (Mark IVB P3I)	MIPR	Jan 97	2,986	2,986	2,986				0	2,986	
Lockheed-Martin (Titan II Msn Unique Studies)	SS/CPAF	Oct 98	5,268	5,268	5,268	99	93		0	5,460	
Boeing (EELV Msn Unique Studies & Services)	SS/CPAF	Jul 00	1,717	1,717	1,017	600	283		0	1,900	
Aerojet	SS/CPAF	May 92	2,530	2,530	2,530				0	2,530	
Aerojet	C/CPAF/FFP	Mar 89	85,979	85,979	85,979				0	85,979	
Aerojet (SSM/TW/IS S&S & Model + SSMIS)	SS/CPAF	May 98	2,183	2,183	2,183				0	2,183	
Project 4758											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0305160F Defense Meteorological Satellite Program				4758	
(U) <u>Performing Organizations Continued:</u>									
<u>Product Development Organizations</u>									
Raytheon, formerly Hughes	SS/CPFF	May 96	236	236	236			0	236
(SSMI Spt & Svc)									
AFRL	MIPR/PD	Oct 95			5,289			0	5,289
NRL	MIPR/Var	Oct 95			12,821	500	250	0	13,571
APL	MIPR/Var	Oct 95			3,538			0	3,538
SMC (Det 3 SSSG/NPOESS)	FCA/MIPR	Dec 95			2,506			0	2,506
Sandia	MIPR/Var	Oct 96			820			0	820
NOAA					34			0	34
Other	Various				4,609	978	1,110	307	7,004
Historical Satellite Blocks	Various				583,786				583,786
<u>Support and Management Organizations</u>									
FFRDC	AF 277	Dec 00			23,147	2,157	819		26,123
PRC/BD Systems/TASS	C/CPAF	Apr 01			8,142	1,373		0	9,515
Program Mgmt					20,688	2,176		0	22,864
Litigation Support					1,809			0	1,809
Other	Various	Jul 91			1,958			100	2,058
Historical Satellite Blocks	Various				38,530			0	38,530
<u>Test and Evaluation Organizations</u>									
NONE									
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>									
NONE									
<u>Support and Management Property</u>									
NONE									
Project 4758			Page 5 of 6 Pages				Exhibit R-3 (PE 0305160F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program	PROJECT 4758
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(U) Government Furnished Property Continued:

Test and Evaluation Property

NONE

	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	785,633	7,132	2,997	818	0	796,580
Subtotal Support and Management	94,274	5,706	819	100	0	100,899
Subtotal Test and Evaluation						
Total Project	879,907	12,838	3,816	918	0	897,479

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System User Equipment Space	PROJECT 3028
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3028 Navstar GPS	47,822	85,241	100,589	104,387	92,949	89,387	76,067	73,860	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Global Positioning System (GPS) is a space-based radio positioning, navigation, and time 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 all Services and DoD. RDT&E funds UE development and testing, studies and engineering to assist UE aircraft integration, software upgrades, product improvement studies, commercial GPS UE test and evaluation, and mission support. Due to increasing military GPS dependence and emerging Electronic Warfare (EW) threat, Navigation Warfare (Navwar) program was established to address EW solutions for GPS. Key elements of GPS Modernization include protecting U.S. military and allies' use of GPS, preventing hostile exploitation of GPS, and preserving civil use of GPS outside the area of operations (AOO).

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$14,387 Continued Advanced UE Technology efforts
- (U) \$10,491 Continued Selective Availability Anti-Spoofing Module (SAASM)/GPS Receiver Application Module (GRAM)-SAASM development
- (U) \$5,793 Continued Integration, Test and Evaluation
- (U) \$5,677 Continued System Engineering and support
- (U) \$9,150 Continued Modernization efforts (M-Code Development)
- (U) \$2,324 Completed classified requirement
- (U) \$47,822 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$29,008 Continue Advance UE Technology efforts
- (U) \$17,946 Continue SAASM/GRAM-SAASM development
- (U) \$6,896 Continue Integration, Test and Evaluation
- (U) \$19,391 Continue System Engineering and support

Project 3028

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Exhibit R-2 (PE 0305164F)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System User Equipment Space	PROJECT 3028
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands) Continued

(U) \$12,000 Continue Modernization efforts (M-Code Development)
 (U) \$85,241 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program
 (U) \$21,868 Continue Advance UE Technology efforts
 (U) \$12,055 Continue SAASM/GRAM-SAASM development
 (U) \$7,000 Continue Integration, Test and Evaluation
 (U) \$17,666 Continue System Engineering and support
 (U) \$42,000 Continue Modernization (M-Code Development)
 (U) \$100,589 Total

(U) **B. Budget Activity Justification**

This program element is in Budget Activity 7 - Operational System Development, because UE passed Milestone IIB in January 1992.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	52,541	86,799	60,981	TBD
(U) Appropriated Value	53,093	86,799		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-786	-1,186		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-372		
d. Below Threshold Reprogram	-4,485			
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR			39,608	
(U) Current Budget Submit/FY 2004 PBR	47,822	85,241	100,589	TBD

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System User Equipment Space	PROJECT 3028
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) **Significant Program Changes:**

FY04: \$39,608K to develop increased anti-jam capabilities on GPS User Equipment and M-code UE development.

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Operations and Maintenance (PE 0305164F, BA 1 - Operating Forces, SAG 13D)	1,775	1,838	2,183	2,585	2,050	2,141	2,303	2,674	Continuing	TBD
(U) Aircraft Procurement (PE 0305164F, BA 7, Aircraft Support Equipment, BP19)	29,006	16,654	29,924	33,032	28,030	23,887	35,291	36,392	Continuing	TBD
(U) Other Procurement (PE 0305164F, BP 63 - Electronics & Telecommunications Equipment, WSC 6730, P-62); BP 86 - Spares & Repair Parts, WSC 190A, P-106)	4,159	4,301	10,332	10,326	8,208	5,306	4,806	3,888	Continuing	TBD
(U) Related RDT&E:										
(U) PE 0305165F, NAVSTAR GPS (Space/Ground Segments)										
(U) PE 0603421, NAVSTAR GPS (GPS III)										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System User Equipment Space				PROJECT 3028		
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) PE 0305176F, Combat Survivor/Evader Locator										
(U) E. Acquisition Strategy										
Several ongoing and planned concept definition and technology risk reduction programs will define and mature required GPS technologies needed for GPS Modernization. Our strategy will develop an open system architecture for a GPS receiver based on the GPS Receiver Applications Module (GRAM) concept. The GRAM-Selective Availability Anti-Spoofing Module (SAASM) program is a further risk reduction effort to integrate the GPS receiver operations internally between GRAM and SAASM. Also, several anti-jam technology risk reduction efforts will be pursued to mature technologies and prepare for technology insertion. Continue to work with platforms/users to identify requirements and upgrade paths to insert GPS enhancements.										
The Military-code User Equipment (M-Code UE) program will provide an industrial base for future warfighter requirements. By developing controlled, non-proprietary specifications and interface control documents (ICDs), the program will enable the Services to acquire affordable M-Code UE through their program offices and/or the GPS JPO. A certification plan will verify compliance. The program will use a phased approach:										
- A Program and Research Development Announcement (PRDA) contract for program concept development is intended to reduce risk and advance the technology required for future development. The government contemplates a Cost Plus Fixed Fee (CPFF) type contract for the PRDA scheduled for release in 3QFY03.										
- A follow-on contract for engineering development of three form factors (handheld, munition, and aviation) as well as integration and test of at least one form factor is schedule for contract award in FY05.										
(U) F. Schedule Profile										
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>		
		1	2	3	4	1	2	3	4	1
(U) GB GRAM-SAASM Interface Control Document (ICD) complete				*						
(U) GB GRAM-SAASM preproduction prototypes deliveries					*					
(U) M-Code Receiver Requirements Definition							X			
(U) Adv UE Technology - Digital AE upgrade CDR							X			
(U) Adv UE Tech - Small antenna prototype development completion					*					
(U) Begin Handheld (Defense Advance GPS Receiver (DAGR)) NRE					*					
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305164F NAVSTAR Global Positioning System User Equipment Space	PROJECT 3028
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(U) A. Project Cost Breakdown (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Advanced UE Technology effort	14,387	29,008	21,868
(U) SAASM/GRAM-SAASM development	10,491	17,946	12,055
(U) Integration, Test and Evaluation	5,793	6,896	7,000
(U) System engineering and support	5,677	19,391	17,666
(U) Modernization (M-Code Development)	9,150	12,000	42,000
(U) Classified Requirement	2,324	0	0
(U) Total	47,822	85,241	100,589

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

(U) Performing Organizations:

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Rockwell (MAGR)	C/FPIF/FFP/CPAF	Various	19,293	19,293	19,293	0	0	0	0	19,293
DOE Sandia (SAASM)	MIPR	Feb 94	N/A	N/A	19,945	487	5,110	8,500	Continuing	TBD
NAWC (SAASM)	MIPR	Oct 95	599	599	599	0	0		0	599
Various (SAASM)	Various	Various	N/A	N/A	16,521	2,072	12,836	3,555	Continuing	TBD
Various (M-Code)	Various	Dec 00	N/A	N/A	8,962	9,150	12,000	42,000	Continuing	TBD
Alliant Techsys Inc (SAASM)	C/CPFF	Oct 95	4,782	4,782	4,782	0	0	0	0	4,782
Multiple (NAVWAR PRDAs)	C/CPAF	Aug 96	13,440	13,440	13,440	0	0	0	0	13,440
Holloman AFB (Integration)	Project Order	N/A	N/A	N/A	4,519	285	596	600	Continuing	TBD
General Dynamics (Various)	Time and Materials	Jan 96	1,810	1,810	1,810	0	0	0	0	1,810

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development				0305164F NAVSTAR Global Positioning System User Equipment Space					3028	
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
ACTD (Prevention/Protection)	Various	Various	7,428	7,428	7,428	0	0	0	0	7,428
ACTD (Protection)	Various	Various	20,186	20,186	20,086	0	0	0	0	20,086
Adv UE Protection Dev	Various	Various	20,691	20,691	9,513	4,037	0	0	0	13,550
Various (NET)	Various	Various	10,334	10,334	10,334	0	0	0	0	10,334
Various (Classified Requirement)	Various	Various	17,786	17,786	22,279	2,324	0	0	0	24,603
Various (GPS Modernization)	Various	Various	TBD	TBD	5,785	0	0	0	0	5,785
Various (Navwar M&S)	Various	Various	3,575	3,575	3,575	0	0	0	0	3,575
CeCom (DAGR study)	MIPR	Dec 97	273	273	273	0	0	0	0	273
Allan Osborne, Alliant Tech, Rockwell Collins, and Raytheon (DAGR)	PRDA	Jan 01	13,645	13,645	10,622	6,902	10,000	0	Continuing	TBD
Various (GRAM-SAASM)	PRDA	Jul 98	27,469	27,469	26,599	3,895	0	0	0	30,494
Advanced UE Tech Invest	Various	Various	4,646	4,646	4,646	0	0	0	0	4,646
Receiver Technology	Various	Various	N/A	N/A	4,238	1,725	3,800	3,180	Continuing	TBD
Anti-jam Filter Technology	Various	Various	N/A	N/A	600	1,445	4,208	2,688	Continuing	TBD
Advanced Antenna Technology	Various	Various	N/A	N/A	6,737	4,315	11,000	16,000	Continuing	TBD
<u>Support and Management Organizations</u>										
Overlook Sys (OASD/C3I)	C/CPFF	Dec 95	N/A	N/A	22,297	2,239	2,500	0	0	27,036
Aerospace Corp (Technical Supt)	CPFF	Various	N/A	N/A	5,152	683	3,900	4,200	Continuing	TBD
SMC/FMB (Shared Prg Cost)	Various	Various	N/A	N/A	6,509	818	907	964	Continuing	TBD
PRC (Technical Supt)	Time and Materials	Dec 95	714	714	714	0	0	0	0	714
Project 3028			Page 7 of 8 Pages					Exhibit R-3 (PE 0305164F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305164F NAVSTAR Global Positioning System User				3028		
				Equipment Space						
(U) <u>Performing Organizations Continued:</u>										
<u>Support and Management Organizations</u>										
Miscellaneous (In-house support)	Various	Various	N/A	N/A	5,848	1,937	12,084	12,502	Continuing	TBD
Various (Other Navwar Studies)	Various	Various	2,375	2,375	2,375	5,508	0	0	0	7,883
<u>Test and Evaluation Organizations</u>										
46th TG (SAASM/Test)	Project Order	Various	31,987	31,987	31,987	0	0	0	0	31,987
46th TG (UE develop & product testing)	Project Order	Various	N/A	N/A	8,627	0	6,300	6,400	Continuing	TBD
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					222,586	36,637	59,550	76,523	TBD	TBD
Subtotal Support and Management					42,895	11,185	19,391	17,666	TBD	TBD
Subtotal Test and Evaluation					40,614	0	6,300	6,400	TBD	TBD
Total Project					306,095	47,822	85,241	100,589	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003														
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)					PROJECT 3030													
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost												
3030	NAVSTAR GPS (Space & Control)	183,569	285,415	146,468	129,933	107,134	84,752	43,677	39,696	Continuing	TBD												
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0												
<p>(U) <u>A. Mission Description</u></p> <p>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 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 (PE 0603421F) 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. A revised GPS III program strategy will reduce the cycle time and defer the start of the pre-acquisition phase. As a result, GPS III funding is zeroed in FY04.</p> <p>GPS Modernization Stewardship funds efforts which are of a national scale, joint civil-military in nature, and benefit two or more agencies.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$8,000</td> <td>Continued system engineering, spectrum/frequency management and program operations</td> </tr> <tr> <td>(U) \$5,036</td> <td>Continued IIF satellite development</td> </tr> <tr> <td>(U) \$68,192</td> <td>Continued GPS Modernization for Space (for IIR and IIF satellites)</td> </tr> <tr> <td>(U) \$102,341</td> <td>Continued Operational Control Segment (OCS) development/modernization</td> </tr> <tr> <td>(U) \$183,569</td> <td>Total</td> </tr> </table>												(U) \$0	Accomplishments/Planned Program	(U) \$8,000	Continued system engineering, spectrum/frequency management and program operations	(U) \$5,036	Continued IIF satellite development	(U) \$68,192	Continued GPS Modernization for Space (for IIR and IIF satellites)	(U) \$102,341	Continued Operational Control Segment (OCS) development/modernization	(U) \$183,569	Total
(U) \$0	Accomplishments/Planned Program																						
(U) \$8,000	Continued system engineering, spectrum/frequency management and program operations																						
(U) \$5,036	Continued IIF satellite development																						
(U) \$68,192	Continued GPS Modernization for Space (for IIR and IIF satellites)																						
(U) \$102,341	Continued Operational Control Segment (OCS) development/modernization																						
(U) \$183,569	Total																						
Project 3030			Page 1 of 7 Pages				Exhibit R-2 (PE 0305165F)																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)			
		PROJECT 3030			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$8,864	Continue system engineering, spectrum/frequency management and program operations			
(U)	\$4,173	Continue IIF satellite development			
(U)	\$128,557	Continue GPS Modernization for Space (for IIR and IIF satellites) and enhanced anti-jam capabilities			
(U)	\$143,821	Continue OCS development/modernization			
(U)	\$285,415	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$8,900	Continue system engineering, spectrum/frequency management and program operations			
(U)	\$2,116	Continue IIF satellite development			
(U)	\$1,100	Continue GPS Modernization for Space (for IIR and IIF satellites) and enhanced anti-jam capabilities			
(U)	\$129,752	Continue OCS development/modernization			
(U)	\$4,600	GPS Stewardship (FY03 funded in PE 0603421F)			
(U)	\$146,468	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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	178,655	324,098	174,163	TBD
(U)	Appropriated Value	180,459	296,098		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-2,694	-5,606		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram		-5,077		
	d. Below Threshold Reprogram	5,804			
	e. Rescissions				
Project 3030		Page 2 of 7 Pages		Exhibit R-2 (PE 0305165F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305165F NAVSTAR GPS (Space)				3030			
(U) C. Program Change Summary (\$ in Thousands) Continued											
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>		
(U)	Adjustments to Budget Years Since FY 2003 PBR						-27,695				
(U)	Current Budget Submit/FY 2004 PBR				183,569	285,415	146,468		TBD		
(U)	<u>Significant Program Changes:</u> \$5,804K increase in FY02 for GPS Modernization efforts; reductions in FY03 and FY04 for inflation adjustment and higher Air Force priorities.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>		
(U)	AF RDT&E								<u>Cost to Complete</u>		
(U)	Related RDT&E (PE 0603421F, BA-4/R-42, Project 644993 - GPS Block III)	62,970	55,580	0	40,674	180,513	291,634	779,847	792,797	Continuing	TBD
(U)	Other APPN Operations and Maintenance (PE 0305165F, BA 1 - Operating Forces, SAG 13D)	44,312	57,956	53,263	63,702	66,406	77,121	80,301	83,961	Continuing	TBD
(U)	Missile Procurement (PE 0305165F, BA 5 - Space and Other Support, P-19, 20)	161,948	226,336	258,852	334,878	342,189	266,243	131,960	82,145	Continuing	TBD
(U)	Other Procurement (PE 0305165F, BP 83 - Electronics and Telecommunications Equipment, WSC 6790, P-62, and WSC 6730; BP 86 - Spares & Repair Parts, WSC 190A, P-101)	10,345	13,403	12,589	13,344	13,583	12,046	10,316	22,715	Continuing	TBD
Project 3030		Page 3 of 7 Pages						Exhibit R-2 (PE 0305165F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)	PROJECT 3030
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(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
Related RDT&E										
PE 0305164F, GPS User Equipment										
PE 0305913F, Nuclear Detonation Detection System (NDS)										
PE 0603421F, GPS III										

(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. Modernization efforts for Block IIF were added to the existing contract with Boeing as Engineering Change Proposals (ECPs).

(U) F. Schedule Profile

	<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
	1	2 3	4	1	2 3	4
(U) Enhanced IIA IMOSC Development complete						X
(U) IIF IMOSC Development Begins		*				
(U) IIF IMOSC Development Complete						X
(U) Develop Launch, Anomaly & Disposal Ops (LADO) System						
(U) Release 1 SW Design begins			*			
(U) Release 1 CDR						X
(U) Release 1 delivery to site						X
(U) Continue OCS Architectural Implementation						
(U) Phase 3/4 Installed in GPS Support Facility (GSF)		*				
(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 IIR Modernization Studies			*			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003									
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT									
07 - Operational System Development					0305165F NAVSTAR GPS (Space)					3030									
(U) F. Schedule Profile Continued																			
					<u>FY 2002</u>						<u>FY 2003</u>						<u>FY 2004</u>		
					1	2	3	4	1	2	3	4	1	2	3	4			
(U)	GPS Block IIF PDR				*														
(U)	GPS Defense Acquisition Executive Program Review					*													
(U)	GPS Block IIF Development Complete												X						
(U)	GPS Modernization Long Lead Production Block IIF begins					*													
(U)	GPS IIF Production Start								*										
	* = Completed, X = Scheduled																		
Project 3030					Page 5 of 7 Pages					Exhibit R-2 (PE 0305165F)									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
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 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	System Engineering and spectrum frequency management				8,000		8,864			8,900
(U)	GPS Block IIF satellite development				5,036		4,173			2,116
(U)	GPS Modernization for Space				68,192		128,557			1,100
(U)	OCS development/modernization				102,341		143,821			129,752
(U)	GPS Stewardship				0		0			4,600
(U)	Total				183,569		285,415			146,468
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Applied Research Labs	MIPR	Mar 97			3,349	300	300	300	Continuing	TBD
Boeing (C0025)	FPAF/CPAF/CPFF	Apr 96			407,317	166,219	259,140	130,093	Continuing	TBD
Lockheed-Martin Missiles and Space (C0006)	CPIF	Aug 00			57,000	8,050	16,068	0	0	81,118
GPS III Modernization Lockheed-Martin (C0008)	FFP	Dec 00	15,767	15,767	15,767	0	0	0	0	15,767
GPS III Modernization Boeing (C0010)	FFP	Dec 00	16,000	16,000	16,000	0	0	0	0	16,000
NRL	MIPR	Various			13,430	1,500	1,000	0	Continuing	TBD
GPS Modernization Stewardship	Various	Various			7,274	0	0	4,600	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0305165F NAVSTAR GPS (Space)					3030
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
System Engineering/Support	Various	Various	N/A	N/A	29,501	935	960	975	Continuing	TBD
GPS Modernization Tech Spt		Various			36,684	6,565	7,947	8,500	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	3,231	0	0	0	0	3,231
<u>Test and Evaluation Organizations</u>										
Boeing (96C0025)	FPAF/CPAF/CPFF	Apr 96	N/A	N/A	0	0	0	2,000	Continuing	TBD
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					520,137	176,069	276,508	134,993	TBD	TBD
Subtotal Support and Management					69,416	7,500	8,907	9,475	TBD	TBD
Subtotal Test and Evaluation					0	0	0	2,000	TBD	TBD
Total Project					589,553	183,569	285,415	146,468	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305174F SPACE WARFARE CENTER					PROJECT A011		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
A011	Space Analysis and Application Development	0	0	404	412	410	840	2,067	3,664	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>In FY 2004, Project 67A011, Space Analysis and Application Development includes new start efforts.</p> <p>(U) <u>A. Mission Description</u> The Air Force Space Command (AFSPC) Space Analysis Center will develop/modify new and current tools/models to support HQ Air Force Space Command analyses. Responsibilities include assessing military utility of space and missile systems, improving operational space capabilities, quantifying space effects in exercises and wargames, and acting as a key analysis focal point for collaboration within the national security space community. The models and simulations available for these purposes have not kept up with operational capabilities being fielded and projected to be fielded in space systems. The models and simulations must be modified to have this capability.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$197 Begin model modification. (U) \$87 Begin verification of model changes. (U) \$120 Begin validation of results. (U) \$404 Total</p>											
Project A011				Page 1 of 4 Pages				Exhibit R-2 (PE 0305174F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305174F SPACE WARFARE CENTER				PROJECT A011	
(U) <u>B. Budget Activity Justification</u>									
This effort is in BA07, Operational System Development, due to its support of fielded systems.									
(U) <u>C. Program Change Summary (\$ in Thousands)</u>									
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>
(U)	Previous President's Budget								TBD
(U)	Appropriated Value								
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions								
	b. Small Business Innovative Research								
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram								
	e. Rescissions								
(U)	Adjustments to Budget Years Since FY 2003 PBR							404	
(U)	Current Budget Submit/FY 2004 PBR							404	TBD
(U) <u>Significant Program Changes:</u>									
This effort is a new start in FY04.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>
(U)	AF RDT&E								
(U)	814	707	1,489	1,507	1,517	1,545	1,566	1,586	Continuing
	35174F 3080								
(U) <u>E. Acquisition Strategy</u>									
This effort will be accomplished with competitive contracts.									
(U) <u>F. Schedule Profile</u>									
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003						
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT						
07 - Operational System Development					0305174F SPACE WARFARE CENTER					A011						
(U) F. Schedule Profile Continued																
					<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
					1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin model modification												X				
(U) Begin verification														X		
(U) Begin validation														X		
Project A011					Page 3 of 4 Pages					Exhibit R-2 (PE 0305174F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305174F SPACE WARFARE CENTER			PROJECT A011		
(U) A. Project Cost Breakdown (\$ in Thousands)										
							<u>FY 2002</u>	<u>FY 2003</u>		<u>FY 2004</u>
(U)	Model modification									197
(U)	Verification of model changes									87
(U)	Validation of results									120
(U)	Total									404
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
TBD		Jan 2004	412	412	0	0	0	404	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	0	0	404	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	0	0	404	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System						PROJECT 4137	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4137	Launch and Test Range System (LTRS) Modernization	65,608	85,538	63,210	50,777	27,173	21,626	14,558	9,604	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Eastern Range (ER) at Patrick AFB and Cape Canaveral AFS, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up the Launch and Test Range System, also known as the Spacelift Range System (SLRS). They provide tracking, telemetry, flight analysis, and other capabilities necessary to safely conduct Department of Defense, civil, and commercial spacelift operations; ballistic missile evaluations; and aeronautical and guided weapons tests. Many range assets are outdated, unreliable, inefficient, and costly to operate and maintain.

The Air Force is addressing these range deficiencies through a two-part modernization program. First, the Range Standardization and Automation (RSA) Phase IIA contract completes modernization of selected portions of the control/display and communication segments at both ranges. Second, the SLRS Contract (SLRSC) continues to modernize the instrumentation segment at both ranges. The SLRSC also provides overall systems engineering and architecture management, follow-on modernization of the control/display and communications segments to complete the SLRS architecture, and system level testing to complete the modernization effort. Beginning in FY04, the Air Force is descoping the RSA Phase IIA effort to support higher priorities and refocusing the SLRSC effort on sustainment and recapitalization with limited modernization.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Program
- (U) \$28,072** Continued RSA Phase IIA. Continued development, test, and evaluation of RSA Phase IIA systems, to include: planning & scheduling, interim flight safety, weather, communications network (voice, video, data, core, net manager), differential GPS for metric tracking, final flight operations and analysis, and digital telemetry. Performed product engineering, integration efforts, engineering studies, and related tasks to support the architecture.
- (U) \$30,239** Continued SLRSC. Continued SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Conducted instrument modernization systems design review. Began development, testing, and evaluation of instrumentation systems to include: fixed and mobile telemetry, fixed and mobile command equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, weather equipment, and surveillance equipment. Developed, tested, and evaluated

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305182F Spacelift Range System	4137
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
	changes to flight safety, command and control, and communications subsystems, as well as associated interfaces, required to establish the SLRS automated architecture and to enable centralized and local control of instrumentation.	
(U) \$5,623	Provided program support for Systems Program Office (SPO).	
(U) \$1,674	In conjunction with California Space Authority (CSA), conducted space integration master planning to analyze future space requirements in support of homeland defense, with funds added by Congress.	
(U) \$65,608	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$30,743	Continue RSA Phase IIA. Continue development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), flight operations and analysis, digital telemetry, planning and scheduling, and differential GPS. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.	
(U) \$37,763	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop, test, and evaluate instrumentation systems such as: fixed and mobile telemetry, fixed and mobile command equipment, radars, weather equipment, and surveillance equipment. Integrate modernized instrumentation systems with legacy range systems as well as systems developed by RSA Phase IIA. Develop, test, and evaluate changes to flight safety, command and control, and communications subsystems, as well as associated interfaces, required to establish the SLRS automated architecture and to enable centralized and local control of instrumentation.	
(U) \$6,676	Provide program support for Systems Program Office (SPO), including \$3.5M added by Congress for Eastern Range Core Crew (operational support to acquisition).	
(U) \$9,431	Partner with CSA to conduct Range Technology Demonstration, Space Technology Initiative, and Space Homeland Security Demonstrations, using funds added by Congress.	
(U) \$925	Conduct the Civil Reserve Space Service Initiative using funds added by Congress.	
(U) \$85,538	Total	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305182F Spacelift Range System	PROJECT 4137																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$24,896 Begin descoping/phasing out RSA Phase IIA. Complete or curtail development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), flight safety, and digital telemetry. Develop upgrades needed to evolve and deliver operational Range capabilities. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture.</p> <p>(U) \$35,407 Continue SLRSC. Continue systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop specifications for instrumentation systems such as: fixed and mobile telemetry, fixed and mobile command equipment, radars, weather equipment, and surveillance equipment. Integrate modernized instrumentation systems with legacy systems as well as systems developed by RSA Phase IIA. Develop, test, and evaluate instrumentation to include: radars, telemetry, and command; telemetry communications subsystems; and interfaces to establish the SLRS automated architecture and enable centralized and local control of instrumentation.</p> <p>(U) \$2,907 Provide program support for Systems Program Office (SPO).</p> <p>(U) \$63,210 Total</p> <p>(U) <u>B. Budget Activity Justification</u> These efforts are categorized as Budget Activity 7, Operational Systems Development, since they upgrade fielded systems.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>FY 2004</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">70,113</td> <td style="text-align: center;">82,108</td> <td style="text-align: center;">106,251</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">70,897</td> <td style="text-align: center;">96,808</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-1,110</td> <td style="text-align: center;">-1,755</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-4,179</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-515</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td style="text-align: center;">-9,000</td> <td style="text-align: center;">-43,041</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">65,608</td> <td style="text-align: center;">85,538</td> <td style="text-align: center;">63,210</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	70,113	82,108	106,251	TBD	(U) Appropriated Value	70,897	96,808			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-1,110	-1,755			b. Small Business Innovative Research	-4,179				c. Omnibus or Other Above Threshold Reprogram		-515			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR		-9,000	-43,041		(U) Current Budget Submit/FY 2004 PBR	65,608	85,538	63,210	TBD
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Project 4137	Page 3 of 8 Pages	Exhibit R-2 (PE 0305182F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003					
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305182F Spacelift Range System					PROJECT 4137					
(U) C. Program Change Summary (\$ in Thousands) Continued															
(U) Significant Program Changes:															
FY 2003: Increased funding (Congress) by \$14.7M: 1) \$3.5M for Eastern Range Core Crew; 2) \$3.4M for Range Technology Demonstration; 3) \$4.0M for Space Technology; 4) \$2.8M for Space Homeland Security; and, 5) \$1.0M for Civil Reserve Space Service Initiative.															
FY 2003: Decreased funding by \$9.0M to adjust for program restructuring in FY 2004-2009.															
FY 2004: Decreased funding by \$43.2M, descoping range standarization and automation in favor of increased sustainment and recapitalization efforts.															
(U) D. Other Program Funding Summary (\$ in Thousands)															
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>						
(U) OPAF (PE 0305182F, Spacelift Range System Space P-65, BA 03)	128,414	102,405	80,635	106,791	94,186	82,834	122,971	100,925	Continuing	TBD					
(U) OPAF (PE 0305182F, Initial Spares, P-106, BA 05)	682	1,996	701	1,409	2,749	2,751	2,823	2,859	Continuing	TBD					
(U) E. Acquisition Strategy															
The AF is using two competitively awarded contracts to modernize the ranges. The RSA Phase IIA contract (FY 1996 to FY 2005) is modernizing the communications and control/display segments at both ranges. The SLRS Contract (FY 2001 to FY 2010) is modernizing the instrumentation segment at both ranges and consolidating systems integration and sustainment efforts. The Air Force is descoping the RSA Phase IIA effort and refocusing the SLRSC on sustainment and recapitalization with limited modernization.															
(U) F. Schedule Profile															
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U) RSA Phase IIA															
(U) - Planning & Scheduling															
(U) -- OT&E												X			
(U) -- Operational Turnover													X		
(U) - Weather															
(U) -- First Increment Govt Acceptance							*								
Project 4137				Page 4 of 8 Pages				Exhibit R-2 (PE 0305182F)							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305182F Spacelift Range System					4137				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) - Radar Critical Design Review												X		
(U) - Telemetry Critical Design Review									X					
(U) - Command Critical Design Review									X					
(U) California Space Authority Studies/Projects														
(U) - Space Integration Master Planning in Support of Homeland Defense														
(U) -- Contract Award			*											
(U) -- Final Report/Roadmap								X						
(U) - Range Technology Demonstration														
(U) -- Contract Award						X								
(U) -- Demo Complete/Final Report												X		
(U) - Space Technology Initiative														
(U) -- Contract Award						X								
(U) -- Initiative Complete/Final Report												X		
(U) - Space Homeland Security Demonstration														
(U) -- Contract Award						X								
(U) -- Demo Complete/Final Report												X		
* = completed event; X = planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0305182F Spacelift Range System			4137			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			
(U)	RSA Phase IIA Contract					28,072	30,743	24,896			
(U)	SLRS Contract					30,239	37,763	35,407			
(U)	Program Support					5,623	6,676	2,907			
(U)	California Space Authority Studies/Projects					1,674	9,431				
(U)	Civil Reserve Space Service Initiative						925				
(U)	Total					65,608	85,538	63,210			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Lockheed Martin (RSA Phase IIA)	C/CPAF	Nov 95	411,956	411,956	145,260	28,072	30,743	24,896	Continuing	TBD
	ITT Industries (SLRSC)	C/CPAF	Nov 00	293,692	293,692	15,061	30,239	37,763	35,407	Continuing	TBD
<u>Support and Management Organizations</u>											
	SPO Program Support (FFRDC, SETA, SPO Ops)	Various	Various	N/A	N/A	18,845	5,623	6,676	2,907	Continuing	TBD
	California Space Authority Studies/Projects	Various	Various	N/A	N/A	15,766	1,674	9,431			26,871
	Civil Reserve Space Service Initiative							925			925
<u>Test and Evaluation Organizations</u>											
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System			PROJECT 4137	
(U) Government Furnished Property:								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
GFP determination is ongoing as work progresses on each delivery increment. The current 1000+ item GFP list is too large to be included with this document but is available upon request from the SPO.								
<u>Support and Management Property</u>								
N/A								
<u>Test and Evaluation Property</u>								
N/A								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development				160,321	58,311	68,506	60,303	TBD
Subtotal Support and Management				34,611	7,297	17,032	2,907	TBD
Subtotal Test and Evaluation								
Total Project				194,932	65,608	85,538	63,210	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305202F Dragon U-2 (JMIP)

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	30,348	23,586	52,518	59,975	30,343	9,831	9,971	10,107	Continuing	TBD
4820 Sensor Development	14,657	16,726	47,500	59,975	30,343	9,831	9,971	10,107	0	17,454
4945 High Altitude Subsystems	15,691	6,860	5,018	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	27,099

- In FY02, the U-2 program received \$79.5M as part of the Defense Emergency Response Fund (DERF). Funding was used for Counter-Terrorism activities in support of Operation Enduring Freedom. This funding is not reflected in the FY02 program total.
- In FY03, the U-2 program received \$13.5M in DERF Transfer. Also, the FY03 Appropriations bill cut \$7.0M, later identified as a cut from signals intelligence (SIGINT) funds.
- The following funds were added to project 4820 for the development of a common/scalable modernized SIGINT system (Airborne Signals Intelligence Payload -- ASIP) for both the U-2 and Global Hawk (PE 0305205F Endurance Unmanned Aerial Vehicles, project 4799): FY04 - \$16M; FY05 - \$25M; FY06 - \$17M.
- The following ASIP funds will be administratively transferred to the Distributed Common Ground System (DCGS) Program Element for DCGS/U-2 ASIP integration. FY03: \$0.2M; FY04: \$0.9M; FY05: \$2.2M; FY06: \$1.1M

(U) A. Mission Description

The RDT&E portion of this program element funds efforts required to enhance and sustain the U-2 Dragon Lady reconnaissance aircraft. The RDT&E efforts in this PE focus on sensor and safety of flight projects. In addition to the RDT&E funding there are procurement funds associated with these developments.

(U) B. Budget Activity Justification

This program element is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development for the U-2 aircraft.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)
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(U) C. Program Change Summary (\$ in Thousands)	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	32,804	17,442	4,344	TBD
(U) Appropriated Value	30,804	23,942		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-456	-7,000		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-103		
d. Below Threshold Reprogram				
e. Rescissions		-253		
(U) Adjustments to Budget Years Since FY 2003 PBR		7,000	48,174	
(U) Current Budget Submit/FY 2004 PBR	30,348	23,586	52,518	TBD

(U) Significant Program Changes:
 In FY03, the U-2 program received \$13.5M in DERF Transfer. Also, the FY03 Appropriations bill cut \$7.0M, later identified as a cut from signals intelligence (SIGINT) funds.

In FY04, the U-2 program received \$27.2M for signal intelligence (SIGINT) sensor development/integration and \$16.1M for collaborative SIGINT airborne signals intelligence payload (ASIP).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)					PROJECT 4820	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4820 Sensor Development	14,657	16,726	47,500	59,975	30,343	9,831	9,971	10,107	0	17,454
<p>Budget Activity Justification - This program element is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development for the U-2 aircraft.</p> <p>(U) <u>A. Mission Description</u></p> <p>This development project supports high payoff improvements to the U-2 sensors such as the Advanced Synthetic Aperture Radar System (ASARS-2A), the SENIOR YEAR Electro-optical Reconnaissance System (SYERS) 2 Improvement Program, RF Int programs, and the Airborne Signals Intelligence Payload (ASIP). The ASIP program will design, develop, and integrate a common/scalable modernized signals intelligence (SIGINT) system for both the U-2 and Global Hawk (PE 0305205F Endurance Unmanned Aerial Vehicles, project 4799).</p> <p>The ASARS-2A Program improves area search, precision geolocation, and image quality to support predision guided munitions targeting. The system produces complex imagery, enabling enhanced exploitation methods. ASARS-2A introduces Asynchronous Transfer Mode (ATM) datalink formats to the ISR community and supports National Imagery Transmission Format (NITF) standards. Requirements include ASARS-2A reliability improvements/corrections and exploitation tools for the user (for example, system robustness, Dual Data Link (DDL), Beyond Line of Sight (BLOS), image quality, Ground Moving Target Indication (GMTI), Receiver Exciter Controller (REC) upgrades and software upgrades.</p> <p>The SYERS-2 Improvement Program includes upgrades such as multi-spectral collection and processing, polarization collection and processing, possible hyperspectral collection and processing, and the associated exploitation tools for the user. SYERS-2 also includes reliability and maintainability upgrades that incorporate next generation technology to maintain and enhance system supportability. SYERS Polarimetric Improvement (SYERS P4I) investigates the potential for using polarimetric collection data to find man-made objects on the battlefield.</p> <p>The RF Int Enhancements Program (e.g. NILEDRIIVE, QUICKNOTCH, ALF Upgrade, and EAU Upgrade) maintains present capability by developing replacements for current components affected by diminishing manufacturing sources as well as enhancing capability to exploit evolving signals of interest. Also, we are examining the possibility of modifying current systems to allow them to function on Power/Electromagnetic Interference compatible U-2s.</p> <p>These sensors are being converted to the ATM standard to address vanishing vendor issues and to optimize signals intelligence bandwidth allocation.</p> <p>The ASIP Program will design, develop and build a common/scalable low-band subsystem and will integrate it with the High Band Sub-System (HBSS). The ASIP will</p>										
Project 4820			Page 3 of 12 Pages				Exhibit R-2A (PE 0305202F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2003																																						
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																																						
07 - Operational System Development	0305202F Dragon U-2 (JMIP)	4820																																						
<p>(U) <u>A. Mission Description Continued</u> be fielded on the U-2 and Global Hawk.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$2,150</td> <td>Continue ASARS-2A Interface to Dual Data Link (DDL-II)</td> </tr> <tr> <td>(U) \$6,692</td> <td>Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development and System Robustness Improvements</td> </tr> <tr> <td>(U) \$380</td> <td>Image Chain Analysis</td> </tr> <tr> <td>(U) \$880</td> <td>ASARS-2A Flight Test</td> </tr> <tr> <td>(U) \$2,000</td> <td>RF-INT Enhancements</td> </tr> <tr> <td>(U) \$1,980</td> <td>SYERS Polarimetric Development (SYERS P4I)</td> </tr> <tr> <td>(U) \$575</td> <td>Mission Support</td> </tr> <tr> <td>(U) \$14,657</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$3,726</td> <td>Continue ASARS-2A IQI Software/Hardware Development Tasks and System Robustness Improvements</td> </tr> <tr> <td>(U) \$6,500</td> <td>RF-INT Enhancements</td> </tr> <tr> <td>(U) \$6,500</td> <td>Signals Intelligence (SIGINT) Sensor Development/Integration (Airborne Signals Intelligence Payload, (ASIP))</td> </tr> <tr> <td>(U) \$16,726</td> <td>Total</td> </tr> </table> <p>In FY03, the U-2 program received \$13.5M in DERF Transfer. Also, the FY03 Appropriations bill cut \$7.0M, later identified as a cut from signals intelligence (SIGINT) funds.</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$4,173</td> <td>Continue ASARS-2A IQI Tasks</td> </tr> <tr> <td>(U) \$27,200</td> <td>SIGINT Sensor Development/Integration (ASIP)</td> </tr> <tr> <td>(U) \$16,127</td> <td>Collaborative SIGINT Sensor (ASIP)</td> </tr> <tr> <td>(U) \$47,500</td> <td>Total</td> </tr> </table> <p>In FY04, the U-2 program received \$27.2M for signal intelligence (SIGINT) sensor development/integration and \$16.1M for collaborative SIGINT airborne signals intelligence payload (ASIP).</p>			(U) \$0	Accomplishments/Planned Program	(U) \$2,150	Continue ASARS-2A Interface to Dual Data Link (DDL-II)	(U) \$6,692	Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development and System Robustness Improvements	(U) \$380	Image Chain Analysis	(U) \$880	ASARS-2A Flight Test	(U) \$2,000	RF-INT Enhancements	(U) \$1,980	SYERS Polarimetric Development (SYERS P4I)	(U) \$575	Mission Support	(U) \$14,657	Total	(U) \$0	Accomplishments/Planned Program	(U) \$3,726	Continue ASARS-2A IQI Software/Hardware Development Tasks and System Robustness Improvements	(U) \$6,500	RF-INT Enhancements	(U) \$6,500	Signals Intelligence (SIGINT) Sensor Development/Integration (Airborne Signals Intelligence Payload, (ASIP))	(U) \$16,726	Total	(U) \$0	Accomplishments/Planned Program	(U) \$4,173	Continue ASARS-2A IQI Tasks	(U) \$27,200	SIGINT Sensor Development/Integration (ASIP)	(U) \$16,127	Collaborative SIGINT Sensor (ASIP)	(U) \$47,500	Total
(U) \$0	Accomplishments/Planned Program																																							
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(U) \$16,127	Collaborative SIGINT Sensor (ASIP)																																							
(U) \$47,500	Total																																							
Project 4820	Page 4 of 12 Pages	Exhibit R-2A (PE 0305202F)																																						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305202F Dragon U-2 (JMIP)				4820	
(U) B. Project Change Summary										
Not Applicable										
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) APAF, Manned Recce, 0305202F - ASARS-2A Production	2,977	3,032	1,212	1,653	2,725	3,820	3,657	3,758	0	22,834
(U) APAF, 0305202F - SYERS-2 - Production	2,784	1,814	888	813	861	711			0	7,871
(U) RDT&E, 0305205F - ASIP Development		61,000	56,300	32,500	36,300	11,700			0	197,800
(U) APAF, 0305205F - ASIP Production					21,000	91,400	51,200	51,400	Continuing	Continuing
(U) APAF, 0305202F - ASIP Production				10,000	25,400				0	35,400
(U) Other, 0305202F - SIGINT Enhancements	20,000									20,000
(U) RDT&E, 0305206F, SYERS-2		2,000								2,000
(U) D. Acquisition Strategy										
For airborne collection capability upgrades, modify existing platform and associated ground control equipment via Engineering Change Proposals (ECPs)/Task Orders to existing USAF contracts. For ASARS-2A, SYERS and RF Int, develop and test new technology line replaceable units (LRUs). There is associated procurement funding tied to this development activity.										
(U) E. Schedule Profile										
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003					
BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT					
07 - Operational System Development					0305202F Dragon U-2 (JMIP)						4820					
(U) E. Schedule Profile Continued																
					<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
					1	2	3	4	1	2	3	4	1	2	3	4
(U) ASARS-2A Program																
(U) - Begin IQI Activities					*											
(U) - Continue IQI Activities									X				X			
(U) SYERS-2 Improvement Program																
(U) - Begin SYERS P4I Development (4QFY01)																
(U) ASIP																
(U) - Award Contract									X							
(U) - Preliminary Design Review													X			
(U) - Critical Design Review															X	
(U) RF Int																
(U) - Begin QRC Development Activities					*											
(U) - Continue QRC development programs											*					
Note: * denotes completed event, X denotes planned event.																
Project 4820					Page 6 of 12 Pages					Exhibit R-2A (PE 0305202F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4820			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Hardware/Software Development					9,952		9,089		35,500	
(U)	Systems Engineering					3,980		6,000		10,000	
(U)	Government Costs					725		1,637		2,000	
(U)	Total					14,657		16,726		47,500	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon (ASARS-2A)	CPIF	3Q96	N/A	N/A	105,767	9,222	2,536	3,173	Continuing	TBD
	BF Goodrich (SYERS P4I)	CPFF	4Q02	N/A	N/A	4,954	1,880	0	0	0	6,834
	Raytheon (RF Int)	CPIF	3Q02	N/A	N/A	0	2,000	3,000	0	0	5,000
	Northrop Grumman (SIGINT Sensor Development)	CPIF	3Q03	76,300	76,300	0	0	6,000	26,200	Continuing	TBD
	Northrop Grumman (Collaborative SIGINT Sensor)	CPIF	1Q04						16,127	Continuing	TBD
<u>Support and Management Organizations</u>											
	ASC/RA (from ASARS-2A)						575	400	400	Continuing	TBD
	ASC/RA (from SYERS P4I)						100	0	0	0	100
	ASC/RA (from RF Int)							500	0	0	500
	ASC/RA (from SIGINT Sensor Development)							500	1,000	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305202F Dragon U-2 (JMIP)		4820	
(U) <u>Performing Organizations Continued:</u>						
<u>Test and Evaluation Organizations</u>						
Palmdale (ASARS-2A)			880	790	600	Continuing TBD
Palmdale (RF INT)				3,000		3,000
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
<u>Subtotals</u>					<u>Budget to</u>	<u>Total</u>
Subtotal Product Development	110,721	13,102	11,536	45,500	TBD	TBD
Subtotal Support and Management		675	1,400	1,400	TBD	TBD
Subtotal Test and Evaluation		880	3,790	600	TBD	TBD
Total Project	110,721	14,657	16,726	47,500	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003											
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)					PROJECT 4945										
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost										
4945 High Altitude Subsystems	15,691	6,860	5,018	0	0	0	0	0	Continuing	TBD										
<p>Budget Activity Justification - This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development for the U-2 aircraft.</p> <p>(U) A. Mission Description This project supports development and integration of subsystems on the U-2 (e.g., Advanced Defensive System (ADS or AN/ALQ-221) development, Link-16, and cockpit upgrades, navigator upgrades, datalinks).</p> <p>The U-2 ADS (AN/ALQ-221) development provides a new Wide Band Radar Warning Receiver/Jammer for Search, Track and Launch Detection capability and Track and Launch Jamming capability. The new RWR/Jammer will integrate with the legacy 29E Low Band Receiver/Jammer, 29F Radar Warning Receiver, and portions of the System 29 Band Aid System.</p> <p>The Fuels Conversion Program is an Air Force Research Laboratory research program attempting to develop a low temperature additive for JP-8 to substitute the current JPTS U-2 fuel. The additive will lower per gallon fuel costs and decrease the U-2's logistical footprint.</p> <p>The Dual Data Link (DDL)-II Program provides the capability to transmit ISR data via dual, simultaneous, independent wideband datalinks.</p> <p>The Link-16 program will demonstrate and integrate Link-16 compatibility on the U-2 aircraft.</p> <p>(U) FY 2002 (\$ in Thousands)</p> <table style="width:100%; border: none;"> <tr> <td style="width:5%;">(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$12,979</td> <td>Advanced Defensive System (ADS or AN/ALQ-221). Includes hardware/software development program and test program</td> </tr> <tr> <td>(U) \$1,700</td> <td>JP-8 Fuels Conversion</td> </tr> <tr> <td>(U) \$1,012</td> <td>Continue Dual Data Link - 2 NRE, integration and test</td> </tr> <tr> <td>(U) \$15,691</td> <td>Total</td> </tr> </table>											(U) \$0	Accomplishments/Planned Program	(U) \$12,979	Advanced Defensive System (ADS or AN/ALQ-221). Includes hardware/software development program and test program	(U) \$1,700	JP-8 Fuels Conversion	(U) \$1,012	Continue Dual Data Link - 2 NRE, integration and test	(U) \$15,691	Total
(U) \$0	Accomplishments/Planned Program																			
(U) \$12,979	Advanced Defensive System (ADS or AN/ALQ-221). Includes hardware/software development program and test program																			
(U) \$1,700	JP-8 Fuels Conversion																			
(U) \$1,012	Continue Dual Data Link - 2 NRE, integration and test																			
(U) \$15,691	Total																			
Project 4945			Page 9 of 12 Pages				Exhibit R-2A (PE 0305202F)													

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)	PROJECT 4945
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$3,850	Complete ADS development. Includes hardware/software development program and test program.
(U) \$150	LINK-16 Integration for AF/DCGS
(U) \$109	JP-8 Fuels Conversion
(U) \$2,751	Complete Dual Data Link -2 development program
(U) \$6,860	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$4,908	LINK-16 Integration for AFS/DCGS
(U) \$110	JP-8 Fuels Conversion
(U) \$5,018	Total

(U) **B. Project Change Summary**

Not Applicable

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) APAF - 0305202F - ADS Production		40,606	24,827	10,920	5,632				0	81,985
(U) Other - 0305202F - DDL-2	20,000								0	20,000
(U) APAF - 0305202F - DDL-2	7,200	17,322	16,395	17,649	16,061	15,164			0	89,791
(U) Other - 0305202F - LINK-16 Integration for AF/DCGS	5,000								0	5,000

(U) **D. Acquisition Strategy**

Funds are for the engineering, manufacturing and development for the U-2 Advanced Defensive System (ADS). A sole source contract has been awarded to a prime contractor which will be responsible for delivering a total system. For DDL-2, develop, factory test and flight test the dual data link systems, and continue integration of ABIT P3I into datalink design. DDL-2 utilizes existing CPIF contracts.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305202F Dragon U-2 (JMIP)					4945				
(U) E. Schedule Profile														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	U-2 ADS Milestone 2 (Occurred 2Q00)													
(U)	ADS Phase 2 Contract Award (3Q00)													
(U)	ADS First Prototype Delivery													
(U)	Begin ADS Testing													
(U)	Complete ADS Flight Tests													
(U)	DDL-II Development & Integration Contract Award													
(U)	DDL-II DT Testing Complete													
(U)	Complete DDL-II SIL Testing													
(U)	Complete DDL-II Flight Testing													
(U)	First DDL-II Delivery													
(U)	*											X		
(U)	DDL-II LRIP Award													
(U)	Begin LINK-16 Integration for AF/DCGS													
(U)	LINK-16 flight test													
(U)	Redefine JP-8 Additive													
(U)	Start JP-8 Fuel Conversion Engine Tests													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)			PROJECT 4945			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Hardware and Software Development					13,339		4,440		0	
(U)	Systems Engineering					1,552		2,000		4,888	
(U)	Government Costs					800		420		130	
(U)	Total					15,691		6,860		5,018	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
	ADS Ctr	CPIF	Mar 00	53,775	53,775	40,442	10,133	2,930	0	0	53,505
	Fuels Conversion	CPIF	2Q02	3,060	3,060	1,141	1,552	109	110	Continuing	TBD
	DDL-II Dev and Test	CPIF	Various	7,727	7,727	4,000	976	2,751	0	0	7,727
	LINK-16 Integration	CPIF	3Q02	5,020	5,020	0	0	150	4,778	0	4,928
<u>Support and Management Organizations</u>											
	ASC/RA					180	420	130	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
	Eglin AFB, Edwards AFB			3,350	3,350	2,850	500	0	0	3,350	
						<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Subtotals</u>										
	Subtotal Product Development					45,583	12,661	5,940	4,888	TBD	TBD
	Subtotal Support and Management						180	420	130	TBD	TBD
	Subtotal Test and Evaluation						2,850	500	0	0	3,350
	Total Project					45,583	15,691	6,860	5,018	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
0305205F Endurance Unmanned Aerial Vehicles

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	210,270	346,713	398,631	340,202	220,102	246,442	249,920	253,332	0	TBD
4755 Predator	3,721	14,502	41,017	40,181	27,453	19,486	19,703	19,970	0	TBD
4799 Global Hawk	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362	0	TBD
4883 JTC/SIL MUSE	2,274	0	0	0	0	0	0	0	0	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	47,548

1. In FY02, Predator received \$191.6M as part of the Defense Emergency Relief Fund (DERF). Funding was used to outfit Predator with the Multi-spectral Targeting System (MTS) laser designator/sensor turret and Hellfire missile launch capability, provide enabling improvements, purchase four additional Predator aircraft, and purchase three Predator B aircraft in support of operation Enduring Freedom. This funding is not reflected in the FY02 program total.

2. The Global Hawk program also received \$104.0M in FY02 as part of the Defense Emergency Response Fund (DERF). Funding was used for initial preparation, deployment and sustainment of the Global Hawk system, to cover operations, and accelerate delivery of sensors, and to develop and integrate a SIGINT sensor capability, in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.

(U) A. Mission Description

Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed to provide all-weather, day/night, intelligence, surveillance and reconnaissance (ISR) in direct support of theater ISR collection requirements; and integrate with existing ISR architectures for mission planning, data processing, exploitation and dissemination.

The MQ-1 Predator UAV is a long-dwell, autonomous, unmanned reconnaissance system capable of operating over-the-horizon while providing real-time intelligence information to the Joint Task Force Commander. The air vehicle (A/V) carries electro-optical (EO), Infra-Red (IR) and synthetic aperture radar (SAR), and is capable of transmitting near real time imagery to the task force commander throughout the operational theater. All Predator aircraft are being produced with the Multi-spectral Targeting System (MTS) (a sensor turret that incorporates EO/IR, laser designator/range-finder, and IR illuminator), plus the capability to employ Hellfire laser-guided missiles.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles

(U) **A. Mission Description Continued**

The MQ-9 Predator B is a multi-role UAV, larger than the MQ-1 and will be capable of flying at higher speeds and altitudes. The aircraft will primarily function in a hunter-killer role, employing fused multi-spectral sensors to find, fix, and track ground targets and assess post-strike results. It is in continuing development and will field capability through evolving spirals. The first spiral is the flight characterization evaluation of the original off-the-shelf, proto-type aircraft (Spiral 0). Spiral 1 integrates, tests, and demonstrates the ability to deliver Hellfire laser-guided missiles. Spiral 2 increases the aircraft's gross take-off weight, integrate redundant avionics, a digital electronically controlled engine, sensor/stores management computer, MIL-STD-1760 advanced weapons data bus, and improved the human-machine interface.

The RQ-4A Global Hawk is a high-altitude endurance (HAE) UAV, which provides long-range, persistent, theater-level ISR coverage. Predator B and Global Hawk will be integrated into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architectures, national and international airspace systems, and Service Joint-component combat environments.

(U) **B. Budget Activity Justification**

This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	190,237	309,743	354,679	TBD
(U) Appropriated Value	197,737	352,743		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,955	-3,897		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram	23,000			
d. Below Threshold Reprogram	-7,534	-2,133		
e. Rescissions	-978			
(U) Adjustments to Budget Years Since FY 2003 PBR			43,952	
(U) Current Budget Submit/FY 2004 PBR	210,270	346,713	398,631	TBD

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DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305205F Endurance Unmanned Aerial Vehicles**(U) C. Program Change Summary (\$ in Thousands) Continued****(U) Significant Program Changes:**

The December 2002 Interim Program Review (IPR) rebaselined the Global Hawk transformation program, which accelerates delivery of this ISR capability to the warfighter.

Global Hawk received \$104.0M in FY02 as part of the Defense Emergency Response Fund (DERF) to support OPERATION ENDURING FREEDOM. This was used to cover preparation and deployment of the Global Hawk system, accelerate delivery of sensors, and develop and integrate a SIGINT sensor capability. This funding is not reflected in the FY02 program total.

Adjustment to FY04 budget since FY03 PBR due to addition of funds for Predator B spiral development.

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles						PROJECT 4755	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4755	Predator	3,721	14,502	41,017	40,181	27,453	19,486	19,703	19,970	0	TBD

In FY02, Predator received \$208.4M as part of the Defense Emergency Relief Fund (DERF). Funding was used to outfit Predator with the Multi-spectral Targeting System (MTS) laser designator/sensor turret and Hellfire missile launch capability, provide enabling improvements, purchase four additional Predator aircraft, purchase 10 Lynx SARs, and purchase three Predator B aircraft in support of operation Enduring Freedom. None of this funding is reflected in the FY02 program total.

(U) A. Mission Description

The Predator program includes RQ/MQ-1 and MQ-9 unmanned aerial vehicles (UAVs), mobile and fixed Ground Control Stations (GCS), and associated communications and support equipment.

The RQ/MQ-1 Predator Unmanned Aerial Vehicle is a long dwell reconnaissance system capable of surveillance of critical targets at a range of 400 nm from the launch area. Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. The entire fleet is being fitted with Multi-spectral Targeting System (MTS) sensors capable of laser target designation and illumination. Additionally all aircraft will be modified to allow HELLFIRE laser-guided missile employment. Predator incorporates line-of-sight (LOS) and wide-band Ku-band SATCOM datalinks capable of providing near-real-time (NRT) transmission of high resolution imagery throughout the operational envelope. As Predator moves into its multi-mission role, the Air Force will continue experiments to expand roles, missions, sensors, and new weapons capabilities to leverage its battlefield persistence.

The MQ-9 is currently in flight test and will continue its development as a hunter-killer, Reconnaissance, Surveillance, and Target Acquisition (RSTA) asset. Two aircraft were procured as they were configured from the contractor (Spiral 0). The Air Force is currently defining the full operational configuration for Predator B and will spirally develop the system to meet our requirements. Spiral 1 increases takeoff gross weight, adds redundant avionics, advanced digital sensors, wing hard points for weapons, and delivers a capability to deliver HELLFIRE laser-guided missiles. Spiral 2 will integrate advanced weapons and update the human-machine interface. Subsequent spirals will develop follow-on sensors/payloads and update GCS and associated communications equipment.

Budget Activity Justification: This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305205F Endurance Unmanned Aerial Vehicles	4755
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$2,371	Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation, continuing developmental testing for tactical common datalink [TCDL] integration)	
(U) \$350	System concept studies	
(U) \$500	Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability	
(U) \$450	Development and Operational Test	
(U) \$50	Field support	
(U) \$3,721	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$2,396	Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation)	
(U) \$8,731	MQ-9 Spiral development (aircraft improvements, development and integration of follow-on sensors, weapons and payloads, and associated communications equipment)	
(U) \$2,000	Predator View situational awareness/mission planning system	
(U) \$375	System concept studies	
(U) \$500	Rectify identified air vehicle and ground station deficiencies to improve reliability and maintainability	
(U) \$450	Development and Operational Test	
(U) \$50	Field support	
(U) \$14,502	Total	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$3,000	MQ-1 Pre-planned Product Improvement (To include: Advanced capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation, continuing developmental testing for TCDL integration, and associated communications equipment.	
(U) \$28,000	MQ-9 spiral development (aircraft improvements, development and integration of follow-on sensors, weapons and payloads, and associated	
Project 4755	Page 5 of 19 Pages	Exhibit R-2A (PE 0305205F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4755
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(U) **A. Mission Description Continued**

(U) **FY 2004 (\$ in Thousands) Continued**

	communications equipment)	
(U) \$4,204	Continue a reliability and maintainability program to ensure the continued viability of the MQ-1/MQ-9 air vehicle, ground control station, and associated communications equipment.	
(U) \$1,000	System Concept Studies	
(U) \$3,813	Developmental and Operational Test	
(U) \$1,000	Field support	
(U) \$41,017	Total	

(U) **B. Project Change Summary**

Not Applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement, AF (PE 35205F), Predator	89,876	129,534	196,369	197,854	225,020	118,136	139,866	244,766		1,341,421
(U) Aircraft Modification, AF (PE 35205F)	14,813	10,145	14,178	19,189	27,293	27,541	28,291	28,764		TBD
(U) Aircraft Initial Spares, AF (PE 35205F)	504	8,497	377	406	470	472	484	492		TBD

(U) **D. Acquisition Strategy**

Both the MQ-1 Predator and MQ-9 Predator B will be acquired through the BIG SAFARI Program Office. MQ-1 Predator is in accelerated production with ISR sensors, laser designators, and weapon delivery capability. MQ-9 Predator B will be acquired as a 'Hunter Killer' system through a series of spirals to rapidly deliver combat capability. Each spiral will build on the delivered capability from the previous spirals and will include advanced sensor capabilities and evolving weapon payloads. Prime contractor for both aircraft is General Atomics Aeronautical Systems Inc.

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BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT		
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles						4755		
(U) E. Schedule Profile													
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Delivery of first production weaponized MQ-1						*						
(U)	MQ-9 Spiral 0 Complete						X						
(U)	MQ-9 Spiral 1 Demonstration								X				
	* denotes completed event												
	X denotes planned event												
Project 4755													
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4755
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Hardware/Software	2,371	9,127	16,191
(U) Demonstrations and test	450	450	2,700
(U) System integration and engineering support	400	4,425	21,376
(U) Other technical/engineering	500	500	750
(U) Total	3,721	14,502	41,017

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
General Atomics	SS/CPFF	Apr 98	N/A	N/A	9,692	2,771	13,552	37,567	Continuing	TBD
PM TESAR			N/A	N/A	2,300				Continuing	TBD
<u>Support and Management Organizations</u>										
ASC					0	500	500	750	Continuing	TBD
AD/NAVAIR					320				Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFOTEC					795	200	200	1,000	Continuing	TBD
Misc					330	250	250	1,700	Continuing	TBD

(U) **Government Furnished Property:**

<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305205F Endurance Unmanned Aerial Vehicles		4755	
(U) Government Furnished Property Continued:						
<u>Test and Evaluation Property</u>						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
				<u>Budget to</u>		<u>Total</u>
				<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			11,992	2,771	13,552	37,567
Subtotal Support and Management			320	500	500	750
Subtotal Test and Evaluation			1,125	450	450	2,700
Total Project			13,437	3,721	14,502	41,017
						TBD
						TBD
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					PROJECT 4799	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4799 Global Hawk	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362	0	TBD	
<p>1. In FY02 the Global Hawk program received \$104.0M as part of the Defense Emergency Response Fund (DERF) to support OPERATION ENDURING FREEDOM. Funding was used to cover initial preparation for deployment and sustainment of the Global Hawk system, to accelerate delivery of sensors and to develop and integrate a SIGINT sensor capability. This funding is not reflected in the FY02 program total.</p> <p>(U) <u>A. Mission Description</u> The Global Hawk Program consists of the RQ-4A Unmanned Aerial Vehicle (UAV), the AN/MSQ-131 Ground Segment (GS), and the Support System. The Global Hawk System is designed to provide continuous, all-weather, day/night, wide area intelligence, surveillance and reconnaissance (ISR) and includes the interfaces with other theater systems required to support joint tactical warfighters at various levels of command. The aircraft is an autonomous, high altitude, long endurance unmanned aircraft designed as an ISR platform. The Air Force has initiated Engineering and Manufacturing Development (EMD), using a spiral approach to incorporate improvements to the aircraft, ground station, communication system, and payloads. The Air Force will integrate Global Hawk into Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture, national and international airspace systems, and service combat environments. To support this, Air Force will participate in demonstrations, exercises and conduct experiments with Global Hawk that will explore its use in other mission areas and activities.</p> <p>In FY03 - FY09, Global Hawk will continue with spiral development efforts, including integration of signals intelligence (SIGINT) and its radar technology insertion program (RTIP) to enhance the design of the system to meet Operational Requirements Document (ORD) performance and capabilities.</p> <p>This program is Budget Activity 7, Operational Systems Development because it involves Air Force R&D to field a highly capable operational system and provide essential operational capabilities.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 ACCOMPLISHMENTS / PLANNED PROGRAM (U) \$23,784 Complete Fabrication and integration of two additional ACTD aircraft (#6 & #7) (Phase IIC). (U) \$113,044 Continue spiral development and related tasks, to include spiral development of aircraft, payloads, ground stations, and support infrastructure to satisfy ORD requirements. (U) \$4,675 Provide government test and evaluation support at Edwards AFB (U) \$9,592 Provide government program management and related support</p>											
Project 4799			Page 10 of 19 Pages				Exhibit R-2A (PE 0305205F)				

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305205F Endurance Unmanned Aerial Vehicles	4799
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$90	Global Hawk / German ELINT flight demonstration	
(U) \$195	Demonstrations and exercises	
(U) \$16,000	Added to FY02 program per Congressional plus-up for integration and demonstration of High-Band SIGINT system on Global Hawk	
(U) \$13,895	OPERATION ENDURING FREEDOM support	
(U) \$23,000	Added to program in FY02 Supplemental for High-Band Subsystem (SIGINT) on Global Hawk	
(U) \$204,275	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	ACCOMPLISHMENTS / PLANNED PROGRAM	
(U) \$224,091	Continue spiral development and related tasks, to include spiral development of aircraft, payloads, ground stations, and support segment to satisfy ORD requirements.	
(U) \$6,870	Provide government test and evaluation support at Edwards AFB	
(U) \$8,250	Provide government program management, mission support, and other related costs.	
(U) \$3,000	Demonstrations and exercises	
(U) \$90,000	Added to FY03 program per Congressional plus-up for Advanced Payload Development and Support (\$84,000 *), Global Hawk Producibility Initiatives (\$5,000), and Global Hawk Lithium Batteries (\$1,000).	
(U) \$332,211	Total	
* In FY03 \$66.0M continues advanced SIGINT payload modernization for the Global Hawk and U-2 and \$18M continues IMINT payload modernization, of which \$15.775M is a transfer from PE 0305206F, project 4818, Imaging and Targeting Support..		
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	ACCOMPLISHMENTS / PLANNED PROGRAM	
(U) \$234,111	Continue spiral development and related tasks, including aircraft (\$100M), payloads (\$42M), ground stations (\$11M), support segment (\$25M), program management, test and systems engineering (\$56M) to satisfy ORD requirements.	
(U) \$9,138	Provide government test and evaluation support at Edwards AFB	
(U) \$8,065	Provide government program management, mission support, and other related costs.	
(U) \$5,000	Demonstrations and exercises	
(U) \$31,500	MP-RTIP sensor adaptation	
(U) \$69,800	Continue advanced SIGINT payload modernization for Global Hawk and U-2 (Global Hawk SIGINT platform integration is in Spiral 3 and	
Project 4799	Page 11 of 19 Pages	Exhibit R-2A (PE 0305205F)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles	PROJECT 4799
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(U) **A. Mission Description Continued**

(U) **FY 2004 (\$ in Thousands) Continued**

platform integration for U-2 is in the U-2 PE, 0305202F).

(U) \$357,614 Total

(U) **B. Project Change Summary**

- NOT APPLICABLE -

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	204,275	332,211	357,614	300,021	192,649	226,956	230,217	233,362		TBD
(U) Other APPN										
(U) AF MILCON		11,682	22,300	24,186						TBD
(U) AF O&M	10,755	11,763	13,338	22,082	21,229	94,114	96,716	97,943		TBD
(U) AF MILPERS	1,031	5,439	12,138	19,629	24,895	30,084	36,326	39,742		TBD
(U) Aircraft Procurement, APPN 10 AF (HAE UAV)	162,256	165,593	252,912	303,167	474,636	538,758	463,629	389,411		TBD
(U) Aircraft Procurement APPN 11 AF (HAE UAV)						9,419	9,675	9,841		TBD
(U) Other Procurement, 3080 (HAE UAV)		856	193	288	286					TBD

All Other Program Funding is within PE 305205F.

(U) **D. Acquisition Strategy**

Northrop Grumman Ryan Aeronautical Center (NG-RAC) was competitively selected for the design/development effort, at the beginning of the ACTD.

Global Hawk will utilize a 'spiral development' approach to production; incrementally adding new technology as it becomes available, to more rapidly provide a technologically superior system to the warfighter.

EMD contracts will comply with FAR-based rules using a Cost-Plus Award Fee (CPAF) type contract.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles					4799				
(U) E. Schedule Profile														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Award EMD System Spiral 2 Contract		*												
(U) Delivery of aircraft #6			*											
(U) Pre-EMD Development Complete					*									
(U) Delivery of aircraft #7						X								
(U) Canadian Overflight								X						
(U) Global Hawk SOUTHCOM demo						X								
(U) Start EMD System Testing						X								
(U) Award EMD Spiral 3 contract						X								
(U) Global Hawk/German ELINT Flight Demonstration							X							
(U) Delivery of AF1 (First AF production aircraft)								X						
(U) EMD Spiral 1 Complete									X					
(U) Delivery of AF2									X					
(U) Award EMD Spiral 4 contract										X				
(U) Operational Assessment												X		
* denotes completed event														
X denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305205F Endurance Unmanned Aerial Vehicles			4799		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Complete Fabrication and Integration of aircraft #6 and #7 (Phase IIC)				23,784		0		0	
(U)	Continue Spiral Development, and Related Tasks				113,044		224,091		234,111	
(U)	-- Includes spiral development of aircraft, payloads, ground stations and support segment and other capabilities which will satisfy ORD requirements.									
(U)	Provide Government Test and Evaluation Support at Edwards AFB				4,675		6,870		9,138	
(U)	Government Program Management and Mission Support				9,592		8,250		8,065	
(U)	Demonstrations/Exercises				195		3,000		5,000	
(U)	Global Hawk/German ELINT Flight Demonstration				90		0		0	
(U)	Integration/Demonstration of High-Band Subsystem (SIGINT)				16,000		0		0	
(U)	OPERATION ENDURING FREEDOM Support				13,895		0		0	
(U)	FY02 Supplemental High-Band Subsystem (SIGINT) for Global Hawk				23,000		0		0	
(U)	MP-RTIP Sensor Adaptation (platform integration efforts are in Spiral 4)				0		0		31,500	
(U)	Added to FY03 program per Congressional plus-up for Global Hawk SIGINT (\$5M transferred from DERF), Advanced Payload Development and Support (\$84M), Global Hawk Producibility Initiatives (\$5M), and Global Hawk Lithium Batteries (\$1M)				0		90,000		0	
(U)	Continues advanced SIGINT Payload Development, program management, and other related support tasks for Global Hawk and U-2. (Global Hawk SIGINT platform integration is in Spiral 3 and platform integration for the U-2 is in the U-2 PE.				0		0		69,800	
(U)	Total				204,275		332,211		357,614	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
	<u>Contractor or</u>		<u>Contract</u>							
	<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>	<u>Performing</u>	<u>Project</u>			
	<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
	<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>
									<u>Budget</u>	<u>Budget to</u>
									<u>FY 2004</u>	<u>Complete</u>
										<u>Total</u>
										<u>Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305205F Endurance Unmanned Aerial Vehicles				4799		
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
NGRAC (aircraft)	CPAF/IF		N/A	N/A	262,992	137,716	228,034	248,444	Continuing	TBD
NG/TRW (ASIP dev.)					28,000	48,200	56,300	35,200	Continuing	TBD
ESC (RTIP sensor integration)					0	0	11,000	31,500	Continuing	TBD
<u>Support and Management Organizations</u>										
Various			N/A	N/A	12,088	10,714	17,110	21,800	Continuing	TBD
Support ASC					1,605	2,275	3,267	5,970	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFFTC			N/A	N/A	12,982	4,000	7,735	8,827	Continuing	TBD
AFOTEC			N/A	N/A	1,621	200	425	485	Continuing	TBD
JITC			N/A	N/A	250	175	340	388	Continuing	TBD
Various			N/A	N/A	12,937	995	8,000	5,000	Continuing	TBD
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					290,992	185,916	295,334	315,144	TBD	TBD
Subtotal Support and Management					13,693	12,989	20,377	27,770	TBD	TBD
Subtotal Test and Evaluation					27,790	5,370	16,500	14,700	TBD	TBD
Total Project					332,475	204,275	332,211	357,614	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					PROJECT 4883
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4883 JTC/SIL MUSE	2,274	0	0	0	0	0	0	0	0	TBD
<p>For FY03 data see PE 0308601F, Modeling and Simulation Support, and for FY04 data see PE 0305206F, Imaging and Targeting Support (I&TS), project 675092, JTC/SIL MUSE. The project was transferred to the I&TS PE to better align it with other JMIP programs and dollars.</p> <p>A separate project code within PE 0305205F provides visibility of the funds supporting the JTC/SIL MUSE through FY02. The remainder of the funding for this project has been transferred to the Modeling and Simulation PE.</p> <p>(U) <u>A. Mission Description</u> The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides and develops simulations of UAVs, their tactical and strategic reconnaissance uses and how their imagery products are used in the DoD reconnaissance system. These simulations are applied for the development of the Army's tactical UAV (TUAV), the Navy's vertical takeoff UAV (VTUAV), Air Force's Predator medium altitude endurance UAV (EUAV) and the Air Force's Global Hawk high altitude EUAV.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$2,274 JTC/SIL MUSE (U) \$2,274 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total See PE 0308601F for FY03 data</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total See PE 0305206 for FY04 data</p> <p>(U) <u>B. Project Change Summary</u> Not Applicable</p>										
Project 4883			Page 16 of 19 Pages				Exhibit R-2A (PE 0305205F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4883			
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E	0	0	0	0	0	0	0	0	0	0	
(U) Other APPN	0	0	0	0	0	0	0	0	0	0	
(U) D. Acquisition Strategy											
N/A											
(U) E. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) Activity TBD											

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles			PROJECT 4883			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	No activity planned					2,274		0			
(U)	Total					2,274		0			
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	JTC/SIL MUSE					2,274				Continuing	TBD
	<u>Support and Management Organizations</u>										
	None										
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Contract</u>	<u>Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Item Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
	<u>Test and Evaluation Property</u>										
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
07 - Operational System Development			0305205F Endurance Unmanned Aerial Vehicles			4883
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				2,274		TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						TBD
Total Project				2,274		TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305206F Airborne Reconnaissance Systems

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	60,513	60,381	77,823	66,609	58,741	59,506	61,237	61,470	Continuing	TBD
4818 Imaging and Targeting Support	11,447	8,707	13,921	14,633	15,397	16,182	17,165	16,806	Continuing	TBD
4819 Common Data Link (CDL)	48,799	44,452	45,462	36,677	35,274	36,133	36,759	37,252	Continuing	TBD
4882 Compass Bright	267	4,784	4,949	5,129	5,176	5,267	5,358	5,430	Continuing	TBD
5038 Network Centric Collaborative Targeting	0	2,438	11,539	8,217	963	0	0	0	Continuing	TBD
5092 JTC/SIL MUSE	0	0	1,952	1,953	1,931	1,924	1,955	1,982	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

- FY03 Congressional actions included: \$6.8M add for Theater Airborne Reconnaissance System (TARS); \$2M add for Senior Year Electro-optical Reconnaissance Systems (SYERS); \$1.7M add for ultra-wideband airborne laser communications; and the transfer of \$15.775M from Imaging and Targeting Support (Project 674818) program to PE 0305205F, Endurance Unmanned Aerial Vehicles, Project 674799, Global Hawk.

- The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) was transferred from PE 0308601F, Modeling and Simulation, into this PE (Project 675092) starting in FY04. JTC/SIL FY02 data can be found in PE 0305205F and FY03 data in PE 0308601F.

(U) A. Mission Description

The Airborne Reconnaissance Systems program coordinates the development of advanced airborne reconnaissance system technologies (i.e., sensors, data links, targeting networks and products, and quick reaction capabilities) in support of multiple airborne reconnaissance platforms, both manned and unmanned. Its objective is to develop, demonstrate, and rapidly transition advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline. This program also coordinates the development of common collection, processing, and dissemination solutions for near-real time intelligence, surveillance, and reconnaissance (ISR).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development

0305206F Airborne Reconnaissance Systems

(U) **B. Budget Activity Justification**

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	57,208	66,810	75,866	TBD
(U) Appropriated Value	57,785	61,535		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-577	-650		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-504		
d. Below Threshold Reprogram	3,600			
e. Rescissions	-295			
(U) Adjustments to Budget Years Since FY 2003 PBR			1,957	
(U) Current Budget Submit/FY 2004 PBR	60,513	60,381	77,823	TBD
(U) <u>Significant Program Changes:</u>				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 4818	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4818 Imaging and Targeting Support	11,447	8,707	13,921	14,633	15,397	16,182	17,165	16,806	Continuing	TBD	
<p>- FY03 Congressional add of \$6.8M for Theater Airborne Reconnaissance System (TARS), \$2M for Senior Year Electro-optical Reconnaissance System (SYERS) and \$1.7M for ultra-wideband airborne laser communications. TARS and SYERS will be executed from PE 0305206F, project 4818, Imaging and Targeting Support. Ultra-wideband airborne laser communications will be executed from PE 0305206F, BPAC 4819, Common Data Link. The FY03 request for project 4818 was \$15.775M which Congress transferred to PE 0305205F, project 4799, Global Hawk. Project 4818 FY03 funds will support the following developmental efforts: continue to support the transition of advanced sensors (e.g. Spectral Infrared Remote Imaging Transisiton Testbed (SPIRITT), Low frequency SAR) to airborne reconnaissance platforms, development of advanced sensor processing capabilities (e.g. automatic registration, automated target detection/recognition), and enhancement of Imagery Intelligence (IMINT) product quality (e.g. tactical sensor model development and image chain analysis). See PE 0305205F for additional information.</p> <p>- Network Centric Collaborative Targeting (NCCT) has been realigned under its own project 5038, within this PE. This resulted in a \$12.5M reduction to the I&TS project between FY03-06.</p> <p>(U) <u>A. Mission Description</u> The purpose of the Imaging and Targeting Support (I&TS) program is to develop next generation, common imagery reconnaissance sensors (e.g., radar and electro-optical systems) for multiple airborne platforms, and sensor products to aid in rapid targeting (e.g., geolocation models, sensor-based exploitation tools, sensor networking capabilities). Developmental efforts pursued are improved sensors (including hyperspectral imaging [HSI], measurement and signature intelligence [MASINT] sensors, polarimetric imaging, ground moving target indication, foliage penetration, and other radar and electro-optical modes), increased geolocation accuracy, advanced sensor data correlation, automated target detection, network centric warfare, and other intelligence, surveillance, and reconnaissance (ISR) technologies to reduce both target search and kill chain timelines; as well as, supporting traditional intelligence activities. I&TS will increase interoperability amongst developed systems by developing common standards and tools. I&TS focuses on the following thrust areas:</p> <p>Development of common radar and electro-optical sensors (e.g., Synthetic Aperture Radar (SAR), Electro-Optical (EO), and Infrared (IR)) and their operational modes (e.g., High Resolution Imagery, Moving Target Indication, Spectral Identification) for multiple airborne platforms.</p> <p>Development of advanced airborne tactical sensor processing algorithms and tools (e.g., automatic registration, automatic target detection/recognition, network centric warfare). These efforts focus on reducing the find, fix and track elements of the time critical targeting kill-chain timeline while improving operator and decision-maker efficiency.</p>											
Project 4818			Page 3 of 27 Pages				Exhibit R-2A (PE 0305206F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305206F Airborne Reconnaissance Systems	4818
<p>(U) <u>A. Mission Description Continued</u> Enhancement of IMINT product quality. Development of open architecture between tactical sensor models and target exploitation tools. Development of tactical sensor models for airborne reconnaissance platforms. Development and implementation of imagery standards (e.g., Common Ground Moving Target Indicator [GMTI], National Imagery Transmission Format [NITF] for Hyperspectral Imagery [HSI]). Monitoring and enhancement of IMINT product quality (e.g., radar and EO/IR imagery, GMTI data, and spectral information) and timeliness throughout the image chain (i.e. from sensor to user).</p> <p>This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.</p>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishment/Planned Program	
(U) \$50	Initiated efforts to transition HSI technology and hardware into airborne reconnaissance platforms.	
(U) \$50	Continued Automated Targeting and Cross-Cueing (ATACCS) risk reduction efforts. Demonstrate and evaluate ATACCS capabilities in operational environment (i.e., Combined Air Operations Center - Experimental [CAOC-X] with live feed).* Studied/demonstrated auto-registration MASINT tracker technologies.	
(U) \$887	Initiated efforts to build an open architecture for tactical sensor models for airborne reconnaissance platforms used to improve geolocation accuracies required for precision targeting. Initiate image quality assessment program.	
(U) \$10,356	Congressional add for TARS.	
(U) \$104	Mission Support	
(U) \$11,447	Total	
*ATACCS efforts have been re-scoped and focused to demonstrate near real-time image processing capabilities (automated geolocation and automated target detection) developed during the risk reduction phase. There are no plans to pursue the 'Airborne' system once envisioned. Ongoing efforts will demonstrate 'Automated' Targeting and Cross-Cueing System (ATACCS) capabilities and where they can be integrated into ISR architectures, such as Distributed Common Ground Station, ISR Manager, Network Centric Collaborative Targeting, etc.		
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishment/Planned Program	
(U) \$1,900	Congressional add for SYERS-2 improvements.	
(U) \$6,707	Congressional add for TARS. Completes airborne information transmission data system (ABIT), EO and SAR pod, and solid state recorder development. Program will complete system development and demonstration (SDD) phase and be ready for LRIP end of FY04.	
(U) \$100	Mission Support	
(U) \$8,707	Total	
Project 4818	Page 4 of 27 Pages	Exhibit R-2A (PE 0305206F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2003																																																								
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT 4818																																																								
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u> *\$15.775M Congressionally transferred to PE 0305205F, Endurance Unmanned Aerial Vehicles, project 4799, Global Hawk. This funding supports the following developmental efforts: continue to support the transition of advanced sensors (e.g. SPIRITT, Low frequency SAR) to airborne reconnaissance platforms, development of advanced sensor processing capabilities (e.g. automatic registration, automated target detection/recognition), and enhancement of IMINT product quality (e.g. tactical sensor model development and image chain analysis). See PE 0305205F for additional information.</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Accomplishment/Planned Program</td> </tr> <tr> <td>(U) \$7,876</td> <td>Continue efforts to transition HSI technology and hardware, such as the SPIRITT sensor, into airborne reconnaissance platforms.</td> </tr> <tr> <td>(U) \$930</td> <td>Continue development of near real time image processing capabilities for automated geolocation and automated target detection/recognition for future integration into ground and/or airborne ISR architectures.</td> </tr> <tr> <td>(U) \$4,300</td> <td>Continue tactical sensor model development and delivery for airborne reconnaissance platforms, such as Predator, U-2, and Global Hawk. Continue image quality baselining and assessment efforts for airborne reconnaissance sensors.</td> </tr> <tr> <td>(U) \$815</td> <td>Mission Support</td> </tr> <tr> <td>(U) \$13,921</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Project Change Summary</u> Not applicable.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <thead> <tr> <th></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT & E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> This program targets high payoff technologies ready to integrate into operational systems to satisfy critical unmet airborne imagery sensor and targeting system requirements. Funds are provided to develop these systems, and to reduce risk associated with their implementation in production systems. Emphasis is placed on maximizing commercial and national development efforts and investment. Multiple contracting methods are used including the use of Engineering Change Proposals (ECPs) to modify existing contracts and new contracts. Contracts have been awarded both competitively and on a sole source basis.</p>			(U) \$0	Accomplishment/Planned Program	(U) \$7,876	Continue efforts to transition HSI technology and hardware, such as the SPIRITT sensor, into airborne reconnaissance platforms.	(U) \$930	Continue development of near real time image processing capabilities for automated geolocation and automated target detection/recognition for future integration into ground and/or airborne ISR architectures.	(U) \$4,300	Continue tactical sensor model development and delivery for airborne reconnaissance platforms, such as Predator, U-2, and Global Hawk. Continue image quality baselining and assessment efforts for airborne reconnaissance sensors.	(U) \$815	Mission Support	(U) \$13,921	Total		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) AF RDT & E											(U) Other APPN										
(U) \$0	Accomplishment/Planned Program																																																									
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	<u>Actual</u>	<u>Estimate</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) Other APPN																																																										
Project 4818	Page 5 of 27 Pages	Exhibit R-2A (PE 0305206F)																																																								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003			
BUDGET ACTIVITY						PE NUMBER AND TITLE						PROJECT		
07 - Operational System Development						0305206F Airborne Reconnaissance Systems						4818		
(U) E. Schedule Profile														
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) SPIRITT ATD Demonstration													X	
(U) SPIRITT SDD Contract award											X			
(U) ATACCS Demos, Contract Comp	*		*	*			X							
(U) Publish TSM TRD/API						X								
(U) Tactical Sensor Model Deliveries							X		X			X		
(U) Image Quality Contract award							X							
(U) COMPLEX SAR Compression Demo											X			
(U) TARS: ABIT on contract				*										
(U) TARS: SAR/EO Pods on contract					*									
(U) TARS: ABIT delivered								X						
(U) TARS: SAR/EO Pods OT/DT&E start													X	
(U) TARS: SAR Pod delivered														
* - Denotes completed event														
X - Denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305206F Airborne Reconnaissance Systems			4818		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Hardware and Software Development					687		0		8,296
(U)	Systems Engineering					150		0		3,450
(U)	Contractor Engineering Support					50		0		1,360
(U)	Government Engineering Support					204		100		815
(U)	Congressional add for TARS Development					10,356		6,707		0
(U)	Congressional add for SYERS Development					0		1,900		0
(U)	Total					11,447		8,707		13,921
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Veridian	Various	ongoing	TBD	TBD	85	843			Continuing	TBD
BAE	Various	ongoing	TBD	TBD	0			5,300	Continuing	TBD
Def Syst Contr - Various	TBD	TBD	TBD	TBD	3,075			7,806	Continuing	TBD
BAE (TARS)	Cost Plus Fixed Fee	10 Dec 02	TBD	TBD	0	3,860	2,200			6,060
Lockheed Martin (TARS)	Firm Fixed Price	30 Sept 02	TBD	TBD	0	4,910	2,500			7,410
L3Comm (TARS)	Cost Plus	4 Sept 02	TBD	TBD	0	1,000	900			1,900
Congressional add for SYERS							1,900			1,900
Other	Various	Various	TBD	TBD	1,292	586	1,107		Continuing	TBD
<u>Support and Management Organizations</u>										
Other Gov't Orgs	Multiple	Multiple	TBD	TBD	1,657	248	100	815	Continuing	TBD
Project 4818					Page 7 of 27 Pages			Exhibit R-3 (PE 0305206F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305206F Airborne Reconnaissance Systems				4818	
(U) Performing Organizations Continued:										
<u>Test and Evaluation Organizations</u>										
Range Support	Various	Multiple	TBD	TBD	638				Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					4,452	11,199	8,607	13,106	TBD	TBD
Subtotal Support and Management					1,657	248	100	815	TBD	TBD
Subtotal Test and Evaluation					638				TBD	TBD
Total Project					6,747	11,447	8,707	13,921	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems						PROJECT 4819	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4819 Common Data Link (CDL)	48,799	44,452	45,462	36,677	35,274	36,133	36,759	37,252	Continuing	TBD	

- FY02: \$7M Congressional Plus-up for Wideband Integrated Common Data Link development. \$3.5M Congressional Plus-up to continue development of High Rate Laser Communications. \$3.6M Below Threshold Reprogramming provided to network centric collaborative targeting (NCCT) based on Air Force priorities. \$4.2M shifted to NCCT from Multi-Platform Common Data Link (MP-CDL) within project 4819 based on Air Force execution priorities. (MP-CDL provided additional funds in FY04 to re-phase schedule.)

- FY03: \$1.7M Congressional Plus-up to continue development of High Rate Laser Communications.

- FY04: \$4.0M added to address time-shifting of MP-CDL development.

(U) A. Mission Description

The objective of the CDL effort within the Air Force is to define an interoperable command, control and communications capability for intelligence and reconnaissance assets to include both manned and unmanned platforms. CDL will achieve interoperable communications paths by employing an architecture based on developed hardware, software, and waveforms to promote commonality among the Services. As the CDL Executive Agent the Air Force is responsible for ensuring design configuration commonality and interoperability. The CDL design will permit existing and future reconnaissance assets to operate worldwide, providing sensor data directly via point to point or via a point multipoint broadcast to ground sites and airborne platforms or via satellite or air-to-air relay when the asset and ground site are not within line-of-sight. This effort will integrate commercial and other satellite communications into the available satellite relay options to ensure sufficient wideband data relay capability. The system will have sufficient bandwidth to accommodate numerous sensors collecting Signals Intelligence (SIGINT), Imagery Intelligence (IMINT) (including video), Multi-spectral and other data. CDL concept and technology development and system development and demonstration efforts will support continuous improvements and implementation of line of sight and network Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. Modular design allows for future technology insertion. The commonality of modular components reduces non-recurring engineering and life cycle costs to the DoD user. Interoperability provides for the exchange of data across service or agency boundaries. (Note: the term A-series refers to full rate/capability CDL systems and T-Series refers to TCDL systems)

This program is categorized as Budget Activity 07 because it provides for development of technologies and capabilities in support of operational system development.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		February 2003
PE NUMBER AND TITLE		PROJECT
0305206F Airborne Reconnaissance Systems		4819
(U) A. Mission Description Continued		
(U) FY 2002 (\$ in Thousands)		
(U) \$0	Accomplishment/Planned Program	
(U) \$2,600	Continued to lease a commercial transponder in support of Global Hawk and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.	
(U) \$5,720	Continued evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, TUAV, VTUAV and Predator.	
(U) \$5,375	Continued Airborne Information Transmission (ABIT) (A-Series) technology integration into CDL systems for application to ISR platforms such as Theater Airborne Reconnaissance System (TARS) and continue ABIT system cost reduction initiatives.	
(U) \$6,055	Continued configuration control of CDL architecture, standards, specification, and modules; provided for Joint-Service interoperability certification and spectrum management.	
(U) \$133	Started development of KGV-135 replacement, initiate CDL migration to DoD network-based encryption architecture.	
(U) \$2,734	Continued development of interface to additional platform and surface terminal equipment (e.g. JSTARS, CDL-N), advanced technology insertion activities, and CDL certification test equipment development.	
(U) \$4,847	Started MP-CDL development of wideband integrated common data link to support MP-RTIP and NCCT.	
(U) \$2,684	Continued satellite communications (SATCOM) interoperability enhancements/Global Grid development/wideband communication airborne networks.*	
(U) \$7,000	Continued NCCT wideband integrated common data link development. This was an FY02 Congressional Plus-up.	
(U) \$8,151	Continued wideband integrated common data link and other development for NCCT.**	
(U) \$3,500	High Rate Laser Communications development (Phase II). This was an FY02 Congressional Plus-up.***	
(U) \$48,799	Total	
* SATCOM interoperability enhancements/Global Grid work continued due to changing system availability and user requirements.		
** Majority of funding was from BTR provided to NCCT (\$3.6M) and shift of funding within project 4819 from MP-CDL to NCCT (\$4.2M). Both changes are in support of Air Force priorities.		
*** High Rate Laser Communications work expected to continue through 3QFY04 using FY02 plus-up funds.		
Project 4819	Page 10 of 27 Pages	Exhibit R-2A (PE 0305206F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305206F Airborne Reconnaissance Systems	4819
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishment/Planned Program	
(U) \$2,613	Complete requirement to lease a commercial transponder in support of Global Hawk and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.	
(U) \$7,976	Continue evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, TUAV, VTUAV and Predator.	
(U) \$5,025	Continue Airborne Information Transmission (ABIT) (A-Series) technology integration into CDL systems for application to ISR platforms such as Theater Airborne Reconnaissance System and continue ABIT system cost reduction initiatives.	
(U) \$5,025	Continue configuration control of CDL architecture, standards, specification, and modules; provide for Joint-Service interoperability certification and spectrum management.	
(U) \$181	Continue development of KGV-135 replacement and initiate CDL migration to DoD network-based encryption architecture.	
(U) \$6,582	Continue development of advanced technology insertion activities (to include studies and analysis of future data link requirements and architectures), CDL certification test equipment development, and related Joint Service interoperability certification and spectrum management requirements.	
(U) \$10,916	Continue MP-CDL development of wideband integrated common data link to support MP-RTIP and NCCT.	
(U) \$502	Continue SATCOM interoperability enhancements/Global Grid development/wideband communication airborne networks.	
(U) \$1,005	Continue NCCT wideband integrated common data link development	
(U) \$1,700	Start Ultra-wideband Airborne Laser Communications development. This is an FY03 Congressional Plus-up.	
(U) \$2,927	Provide CDL mission support.*	
(U) \$44,452	Total	
	* Broken out for clarity purposes. Previously spread among all other tasks.	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	Accomplishment/Planned Program	
(U) \$10,426	Continue evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, TUAV, VTUAV and Predator.	
(U) \$5,274	Continue ABIT (A-Series) technology integration into CDL systems for application to ISR platforms and continue ABIT system cost reduction initiatives.	
(U) \$6,425	Continue configuration control of CDL architecture, standards, specification, and modules.	
Project 4819	Page 11 of 27 Pages	Exhibit R-2A (PE 0305206F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																																																														
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4819																																																																																																													
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands) Continued</u></p> <p>(U) \$105 Continue development of KGV-135 replacement and initiate CDL migration to DoD network-based encryption architecture.</p> <p>(U) \$6,096 Continue development of advanced technology insertion activities (to include studies and analysis of future data link requirements and architectures), CDL certification test equipment development, and related Joint Service interoperability certification and spectrum management requirements.</p> <p>(U) \$13,554 Continue MP-CDL development of wideband integrated common data link to support MP-RTIP and NCCT.</p> <p>(U) \$261 Continue SATCOM interoperability enhancements/Global Grid development/wideband communication airborne networks.</p> <p>(U) \$211 Continue NCCT wideband integrated common data link development.</p> <p>(U) \$0 Ultra-wideband airborne laser communications development.</p> <p>(U) \$3,110 Provide CDL mission support.</p> <p>(U) \$45,462 Total</p> <p>(U) <u>B. Project Change Summary</u> Not applicable</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> CDL funds are provided to various government laboratories and program offices to support new and on-going development efforts in support of providing a common, interoperable wideband data link as mandated by ASD/C3I policy.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="3"><u>FY 2002</u></th> <th colspan="3"><u>FY 2003</u></th> <th colspan="3"><u>FY 2004</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Complete high rate laser communications development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(U) Start ultra-wideband airborne laser communications development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Complete Phase 1 ultra-wideband airborne laser comm development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(U) Continue Commercial Satellite Transponder Lease</td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) None												<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Complete high rate laser communications development												X	(U) Start ultra-wideband airborne laser communications development							X						(U) Complete Phase 1 ultra-wideband airborne laser comm development												X	(U) Continue Commercial Satellite Transponder Lease				*			X					
	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																											
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Project 4819					Page 12 of 27 Pages			Exhibit R-2A (PE 0305206F)																																																																																																													

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305206F Airborne Reconnaissance Systems					4819				
(U) E. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) TCDL\TUAV Risk Reduction Demo			*											
(U) TCDL for Army TUAV Integration Start												X		
(U) Complete ABIT P3I Module Development								X						
(U) Initiate ABIT P3I Systems Development								X						
(U) Release MP-CDL RFP				*										
(U) MP-CDL Contract Awards					*									
(U) MP-CDL CDR									X					
(U) Begin TIGDL-II Prototype Build	*													
(U) TIGDL-II Phase I Test								X						
(U) TIGDL-II Phase II Demo											X			
Note: MP-CDL Request for Proposal and contract award slipped due to program requirements definition and approval.														
*-Denotes completed event														
X-Denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT 4819
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(U) A. Project Cost Breakdown (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Hardware and Software Development	37,523	30,577	31,072
(U) Systems Engineering	2,000	1,437	3,164
(U) Satellite Communications	2,600	2,613	0
(U) Configuration Management	2,301	3,717	4,316
(U) Contractor Engineering Support	715	1,934	2,300
(U) Government Management and Support	3,660	4,174	4,610
(U) Total	48,799	44,452	45,462

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

(U) Performing Organizations:

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
L-3 Communications	Multiple	Multiple			30,301	13,260	20,677	22,377	Continuing	TBD
Harris Corp	Other Transaction	23 Jul 97	TBD	TBD	9,312	4,720	5,420	6,328	Continuing	TBD
Trex Corp	CPIF		TBD	TBD	2,900	3,500	0	0		6,400
SATCOM Interop/Global Grid/Other Govt Orgs	Multiple	Multiple	N/A	N/A	6,398	2,684	502	261	Continuing	TBD
L-3 COMCEPT	Multiple	Jun 01	TBD	TBD	6,243	15,150	1,005	0	Continuing	TBD
ITT		TBD	TBD	TBD	0	0	1,700	0	Continuing	TBD
Other	Multiple	Multiple			23,078	209	2,710	5,270	Continuing	TBD
<u>Support and Management Organizations</u>										
SATCOM	FFP	17 Jul 95			15,937	2,600	2,613	0	Continuing	TBD
Various	Multiple	Multiple			5,445	6,246	9,132	10,171	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development			0305206F Airborne Reconnaissance Systems			4819	
(U) Performing Organizations Continued:							
<u>Test and Evaluation Organizations</u>							
JITC	MIPR	FY99	1,100	430	693	1,055	Continuing TBD
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>							<u>Program</u>
Subtotal Product Development			78,232	39,523	32,014	34,236	TBD TBD
Subtotal Support and Management			21,382	8,846	11,745	10,171	TBD TBD
Subtotal Test and Evaluation			1,100	430	693	1,055	TBD TBD
Total Project			100,714	48,799	44,452	45,462	TBD TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 4882		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4882	Compass Bright		267	4,784	4,949	5,129	5,176	5,267	5,358	5,430	Continuing	TBD

(U) A. Mission Description

The COMPASS BRIGHT program develops, demonstrates, and rapidly transitions advanced Air Force-specific signal intelligence (SIGINT) and radio frequency (RF) measurement and signature intelligence (MASINT) capabilities against emerging and future target signals.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishment/Planned Program
- (U) \$267 Mission Support, Program Management Activities
- (U) \$267 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishment/Planned Program
- (U) \$4,384 Continue COMPASS BRIGHT development projects in the signal intelligence (SIGINT) and radio frequency (RF) measurement and signature intelligence (MASINT) areas
- (U) \$400 Mission Support, Program Management Activities
- (U) \$4,784 Total

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishment/Planned Program
- (U) \$4,479 Continue COMPASS BRIGHT development projects in the SIGINT and RF MASINT areas
- (U) \$470 Mission Support, Program Management Activities
- (U) \$4,949 Total

(U) B. Project Change Summary

- FY02 Appropriations act removed \$41.0M from Joint SIGINT Avionics Family (JSAF) and provided \$16M to PE 0305205F (Endurance Unmanned Air Vehicles) for a High Band Sub-System (HBSS) demonstration. This reduction exceeded the FY02 PB request for JSAF funding, so an additional reduction of \$4.6M was taken from COMPASS BRIGHT.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems				PROJECT 4882				
(U) C. Other Program Funding Summary (\$ in Thousands)												
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E												
(U) Other APPN												
(U) D. Acquisition Strategy												
The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT and RF MASINT systems/subsystems. Acquisition and production of these developed technologies will occur within the appropriate platform programs. On-going COMPASS BRIGHT technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles. The acquisition approach for future development projects will emphasize full and open competition.												
(U) E. Schedule Profile												
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Active Interference Cancellation Prototype Testing		*										
(U) FY02 Projects Authorized to Proceed				*								
(U) FY03 Proposal Call					*							
(U) FY03 Proposals Evaluated and Approved						*						
(U) FY03 Projects Authorized to Proceed							X					
(U) FY04 Proposal Call								X				
(U) FY04 Proposals Evaluated and Approved									X			
(U) FY04 Projects Authorized to Proceed										X		
(U) FY05 Proposal Call												X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems			PROJECT 4882			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	COMPASS BRIGHT projects							4,384		4,479	
(U)	Mission Support/Program Management Activities					267		400		470	
(U)	Total					267		4,784		4,949	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</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>										
	Various	Various	Various	TBD	TBD	0		4,384	4,479	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Various	Various	Various	TBD	TBD	0	267	400	470	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	Subtotal					0					0
	<u>Support and Management Property</u>										
	Subtotal					0					0
	<u>Test and Evaluation Property</u>										
	None					0					0

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
07 - Operational System Development			0305206F Airborne Reconnaissance Systems			4882
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0		4,384	4,479	TBD	TBD
Subtotal Support and Management	0	267	400	470	TBD	TBD
Subtotal Test and Evaluation	0					0
Total Project	0	267	4,784	4,949	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 5038		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5038	Network Centric Collaborative Targeting		0	2,438	11,539	8,217	963	0	0	0	Continuing	TBD

- In FY02, funds for FY03-06 were transferred from project 4818, Imaging and Targeting Support to create this project.
- FY02: NCCT received \$7M Congressional plus-up in PE 0305206F project 4819, Common Data Link (see Section C, CDL below). NCCT received \$1M Congressional plus-up in PE 0305208F, Distributed Common Ground Station (see Section C, DCGS below). NCCT received \$3.6M via BTR in PE 305206F project 4819 (see Section C, CDL below) based on Air Force priorities. \$4.2M shifted to NCCT from multi-platform common data link [MP-CDL] within project 4819 based on Air Force execution priorities (see Section C, CDL below).
- FY03: NCCT received \$8M Congressional plus-up in Manned Reconnaissance Systems PE 0305207F (see Section C, RC-135 below).
- FY04: Increase of \$6.6M required to fully fund participation of all planned ACTD platforms

(U) A. Mission Description

The Network Centric Collaborative Targeting (NCCT) is a CENTCOM sponsored Advanced Concept Technology Demonstration (ACTD) initiated in FY01 that will demonstrate technologies and operational concepts required by Joint/Coalition warfighters. It will provide significant improvements in accuracy and timeliness of time sensitive targeting through 'front end' horizontal integration and collaboration of multiple intelligence, surveillance, and reconnaissance (ISR) assets. NCCT will use a spiral development process to integrate, demonstrate, and assess the ACTD capabilities. The NCCT prototype network, expanded common network processing, and participant interface modules will be installed on selected ISR platforms and systems for demonstrations during FY04 and FY05.

This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishment/Planned Program
- (U) \$0 No FY02 activity within this project. NCCT efforts in FY02 were funded in other PEs (See Section C).
- (U) \$0 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishment/Planned Program
- (U) \$2,138 Continue development of NCCT core technology such as NCCT Network Controller, NCCT Communications Equipment, and NCCT Operator Interface.
- (U) \$300 Program management support.
- (U) \$2,438 Total

Project 5038

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Exhibit R-2A (PE 0305206F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems	PROJECT 5038
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(U) **A. Mission Description Continued**

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishment/Planned Program
(U) \$6,089	NCCT core technology development and testing.
(U) \$2,250	Platform Interface Module (PIM) development and testing.
(U) \$2,600	NCCT integration and testing on platforms.
(U) \$600	Program management support.
(U) \$11,539	Total

(U) **B. Project Change Summary**

Not applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) E-3 AWACS PE 0207417F	150	250	500							900
(U) E-8 JSTARS PE 0207581F	250	250	500							1,000
(U) RC-135 PE 0305207F	1,000	9,000	1,000	1,000	100					12,100
(U) DCGS PE 0305208F	1,000									1,000
(U) CDL PE 0305206F (Project 4819)	15,151	1,005	211	1,000	1,000					18,367
(U) OSD PE 0603750D	5,000	5,000	5,000	1,000	1,000					17,000
(U) Army Guardrail PE 0203744A		250	1,000	1,000	1,000					3,250
(U) Other APPN										

Prior to FY03, NCCT funding was primarily from PE 0305206F project 4819, Common Data Link (CDL). The ACTD includes participating platforms as shown above. United Kingdom Nimrod is also participating in the ACTD with their own funds.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003																																																																																																																																												
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 5038																																																																																																																																												
<p>(U) D. Acquisition Strategy NCCT approved as an ACTD by USD(AT&L) and validated by Joint Requirements Oversight Council in FY01. ASC/RA, Big Safari at Wright Patterson, AFB, manages the Cost Plus Fixed Fee contract used to develop NCCT core technology. Individual platform program offices (Rivet Joint, Joint STARS, AWACS, Air Force DCGS, and Army Guardrail) manage and contract directly for Platform Interface Module development and integration on their platforms. United Kingdom Nimrod program is participating with their own funds.</p>																																																																																																																																																						
<p>(U) E. Schedule Profile</p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="text-align:center"><u>FY 2002</u></th> <th colspan="3" style="text-align:center"><u>FY 2003</u></th> <th colspan="3" style="text-align:center"><u>FY 2004</u></th> </tr> <tr> <th></th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> </tr> </thead> <tbody> <tr> <td>(U) Core technology development begins</td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Gather data for Tactics, Techniques, and Procedure (TTPs) at JCIET 02</td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Implement TTPs gathered from JCIET 02</td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) NCCT Systems Integration Lab demo (Spiral #1)</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) NCCT Hardware in the Loop Systems Integration Lab demo</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Complete Participant Integration Module (PIM) development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">X</td> <td></td> </tr> <tr> <td>(U) Complete PIM integration and testing</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) NCCT Military Utility Assessment live-fly (Spiral #2)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align:center">X</td> </tr> <tr> <td colspan="12"> X Denotes Planned Event * Denotes Completed Event </td> </tr> </tbody> </table>													<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Core technology development begins	*												(U) Gather data for Tactics, Techniques, and Procedure (TTPs) at JCIET 02		*											(U) Implement TTPs gathered from JCIET 02			*										(U) NCCT Systems Integration Lab demo (Spiral #1)					*								(U) NCCT Hardware in the Loop Systems Integration Lab demo								X					(U) Complete Participant Integration Module (PIM) development											X		(U) Complete PIM integration and testing									X				(U) NCCT Military Utility Assessment live-fly (Spiral #2)												X	X Denotes Planned Event * Denotes Completed Event											
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Project 5038				Page 22 of 27 Pages				Exhibit R-2A (PE 0305206F)																																																																																																																																														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0305206F Airborne Reconnaissance Systems			5038			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	NCCT Core Technology Development							2,138		6,089	
(U)	NCCT Integration & Testing									2,600	
(U)	Platform Integration & Testing									2,250	
(U)	Program Management							300		600	
(U)	Total							2,438		11,539	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</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>										
	L-3 ComCept, Inc.	Multiple	FY01	TBD	TBD			2,138	8,618	Continuing	TBD
	Various Contractors								2,321	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Various Contractors							300	600	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305206F Airborne Reconnaissance Systems		5038	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			2,138	10,939	TBD	TBD
Subtotal Support and Management			300	600	TBD	TBD
Subtotal Test and Evaluation						
Total Project			2,438	11,539	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					PROJECT 5092				
COST (\$ in Thousands)				FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5092	JTC/SIL MUSE			0	0	1,952	1,953	1,931	1,924	1,955	1,982	Continuing	TBD
<p>The Joint Technology Center/Systems Integration Laboratory Multiple UAV simulation Environment (JTC/SIL MUSE) BPAC was transferred from PE 0308601F to this program to better align it with JMIP programs and funding. For FY02 data see PE 0305205F, Endurance Unmanned Aerial Vehicles, and for FY03 data see PE 0308601F, Modeling and Simulation.</p> <p>(U) <u>A. Mission Description</u> The Joint Technology Center/Systems Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides simulations of UAVs; their tactical and strategical reconnaissance uses and how their imagery products are used and disseminated within the DoD reconnaissance system. These simulations are utilized for the development of the Army's tactical UAV (TUAV), the Navy's vertical take off UAV (VTUAV), Air Force's Predator medium altitude endurance EUAV and the Air Force's Global Hawk high altitude endurance UAV.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total See PE 0305205F for FY02 data.</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total See PE 0308601F for FY03 data</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$367 Laboratory sustainment (U) \$1,035 Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) development (U) \$550 Maintenance, Licenses and equipment purchases (U) \$1,952 Total</p> <p>(U) <u>B. Project Change Summary</u> Not applicable.</p>													
Project 5092				Page 25 of 27 Pages				Exhibit R-2A (PE 0305206F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems				PROJECT 5092			
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
The program receives approximately \$2.3M per year from the Army and approximately \$1.7M per year from the Navy, through FY09.											
(U) D. Acquisition Strategy											
All funding for JTC/SIL MUSE support sustainment operations; personnel (both government and contractor support), laboratory expenses, maintenance, licenses, equipment purchases and other expenses associated with operating and maintaining facilities. When contracts are required, they will be awarded after full and open competition.											
(U) E. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>		
				1	2	3	4	1	2	3	4
(U) Complete development of laser designator											
(U) Begin development of auto track											
(U) Begin development of damage to fix targets											
<div style="display: flex; justify-content: space-between; margin-top: 20px;"> Project 5092 Page 26 of 27 Pages Exhibit R-2A (PE 0305206F) </div>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305206F Airborne Reconnaissance Systems				5092			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2004</u>	<u>FY 2004</u>	
(U) JTC/SIL MUSE											1,952
(U) Total											1,952
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
JTC/SIL MUSE	MIPR	2QFY03						1,952	Continuing	TBD	
<u>Support and Management Organizations</u>											
<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>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Subtotals</u>											
Subtotal Product Development								1,952	TBD	TBD	
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project								1,952	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305207F Manned Reconnaissance System					PROJECT 4754		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4754	COBRA BALL	7,015	7,915	14,726	13,318	16,615	12,404	12,581	12,752	0	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with modifications to the RC-135 or its mission systems - both air and ground. The results of these development efforts provide the requisite engineering necessary to implement baseline modifications or provide a preliminary assessment of the technical feasibility, operability, or military utility of a specific application.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 ACCOMPLISHMENTS/PLANNED PROGRAM (U) \$5,015 Congressional Add: COBRA BALL Advanced Airborne Sensor (AAS) - \$5.05M (U) \$2,000 Congressional Add: COMBAT SENT Passive Airborne Ranging - \$2M (U) \$7,015 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 ACCOMPLISHMENTS/PLANNED PROGRAM (U) \$7,915 Congressional Add: Network-Centric Collaborative Targeting (NCCT) - \$8.0M (U) \$7,915 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 ACCOMPLISHMENTS/PLANNED PROGRAM (U) \$3,730 Initiates Non-Recurring Engineering (NRE) for the Airborne Extremely High Frequency Communications system to be added to the RC135 fleet. (U) \$10,996 Initiates Non-Recurring Engineering (NRE) for the development and installation of improved mission sensor elements - see classified submission. (U) \$14,726 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field essential operational capabilities.</p>											
Project 4754				Page 1 of 4 Pages				Exhibit R-2 (PE 0305207F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0305207F Manned Reconnaissance System			4754				
(U) C. Program Change Summary (\$ in Thousands)											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget					15,021					
(U)	Appropriated Value			7,100	8,000						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-50	-85						
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram										
	e. Rescissions			-35							
(U)	Adjustments to Budget Years Since FY 2003 PBR					-295					
(U)	Current Budget Submit/FY 2004 PBR			7,015	7,915	14,726		TBD			
(U)	<u>Significant Program Changes:</u>										
	None										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	PE 0305207F, APAF	243,785	165,637	124,076	128,255	124,627	128,877	143,371	145,825		TBD
(U) E. Acquisition Strategy											
The RC-135 Operational Systems Development and enhancement activities are managed by the Air Force through the BIG SAFARI program in the Reconnaissance System Program Office. These projects are managed by Air Force Material Command / Aeronautical Systems Center and provide technical oversight and management of all aircraft, ground and support system modifications, integration and flight test engineering responsibility, product assurance and acceptance testing, and logistics and training activities. Aircraft, aircraft sensor systems, and associated ground support system modifications planned for FY03-FY09 include the procurement, fielding and logistical support for three distinct RIVET JOINT baseline configurations [baseline 7, 8 ,9] and two distinct baselines [baselines 2 & 3] for COMBAT SENT. Additional information is available within the classified Congressional budget exhibits.											
(U) F. Schedule Profile											
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305207F Manned Reconnaissance System					4754				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Prototype Delivery (LRIS)			*											
(U) AAS - LADAR Flight Test Completed							X							
(U) Combat Sent Passive Ranging Completed								X						
* - Denotes completed event														
X - Denotes planned event														
Project 4754					Page 3 of 4 Pages					Exhibit R-2 (PE 0305207F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305207F Manned Reconnaissance System			PROJECT 4754		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	System Design and Analysis					7,015		7,915		14,726
(U)	Fabrication and Test									
(U)	Integration and Support									
(U)	Total					7,015		7,915		14,726
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
ASC/RAB	Multiple	Jan 02	N/A	N/A	4,795	7,015	7,915	14,726	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					4,795	7,015	7,915	14,726	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					4,795	7,015	7,915	14,726	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems						PROJECT 4826	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4826 Common Imagery Ground / Surface Systems	19,903	30,674	27,107	26,198	52,282	180,128	150,063	174,518	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

Note: AF DCGS received significant funding increases in FY 06 - FY 09 to support AF DCGS modernization. These funds will transform AF DCGS from its existing architecture based on proprietary and legacy systems to an open architecture integrated into the Network Centric Warfare environment.

(U) A. Mission Description

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the services and agencies to provide ground/service systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable (using the Common Data Link) with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for Imagery Intelligence (IMINT), Joint Interoperable Operator Network (JION) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT.

AF DCGS provides ground/surface systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data streams between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has four core locations: two CONUS based and two OCONUS. Several other DCGS systems are distributed among Air Force operational units at numbered Air Force locations, to support the Joint Task Force commander and the Air Operations Center (AOC). The CONUS-based systems are deployable and capable of reachback operations via satellite.

AF DCGS provides significant support to Time Critical Targeting (TCT) operations. This support will be enhanced with the planned integration of software tools and closer integration to AOC tools. ISR management capability will provide the Joint Forces Air Component Commander (JFACC) the capability to:

- 1) dynamically visualize and command ISR assets and the information in the AOC
- 2) quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TCT process.

The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within CIGSS architecture. The function of

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305208F Distributed Common Ground Systems	4826
<p>(U) <u>A. Mission Description Continued</u> the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within CIGSS. Baseline capability includes F/A-18 and U-2 sensors. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.</p> <p>Also included in this BPAC is a mobile CIGSS/DCGS testbed. The testbed is being used by service and agency program offices to test interfaces with new sensors, applications, and other modifications. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment.</p>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$1,553	Continued evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I	
(U) \$1,227	Continued CIGSS/DCGS testbed development.	
(U) \$5,513	Continued development of improved command and control of ISR platforms/sensors to enhance DCGS support to the commander, improve integration with the AOC, and increase Time Critical Targeting (TCT) effectiveness. Developed additional spirals of ISR Manager.	
(U) \$4,955	Developed and integrated Network Centric Collaborative Targeting (NCCT) interfaces and functionality within DCGS. Supported ongoing modeling and exercise activities to assist processing and engagement of TCTs.	
(U) \$6,655	Continued evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continued investigation of and implementation of advanced processing tools.	
(U) \$19,903	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$1,560	Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I	
(U) \$1,314	Continue CIGSS/DCGS testbed development.	
(U) \$5,029	Continue development of improved command and control and visualization of ISR platforms/sensors (ISR management capability) to enhance DCGS support to the commander, improve integration with the AOC, and increase Time Critical Targeting (TCT) effectiveness. Continue development of NCCT and DCGS integration.	
(U) \$12,371	Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools.	
Project 4826	Page 2 of 7 Pages	Exhibit R-2 (PE 0305208F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems	PROJECT 4826
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands) Continued

(U) \$10,400 Continue the Adaptive Link Formatter (ALF) and commercial imagery integration started under Cost of War (COW) effort.

(U) \$30,674 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program

(U) \$1,646 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I

(U) \$1,351 Continue CIGSS/DCGS testbed development.

(U) \$5,676 Continue ISR management capability development efforts further integrating this functionality into DCGS. Continue development of improved command and control of ISR platforms/sensors to enhance DCGS support to the commander, improve integration with the AOC, and to increase Time Critical Targeting (TCT) effectiveness. Continue development of NCCT and DCGS integration.

(U) \$7,880 Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools.

(U) \$4,527 Integrate of MASINT exploitation capabilities into DCGS as an extension of the Cost of War (COW) effort.

(U) \$3,527 Develop the geospatial effort in support of AF's and NIMA's transition to digital mapping technology and products as an extension of the COW effort.

(U) \$2,500 Continue commercial imagery integration started under COW effort.

(U) \$27,107 Total

(U) **B. Budget Activity Justification**

Program is in Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	16,280	20,708	17,052	
(U) Appropriated Value	16,429	20,708		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-149			
b. Small Business Innovative Research				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0305208F Distributed Common Ground Systems			4826				
(U) C. Program Change Summary (\$ in Thousands) Continued											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram			3,720							
	e. Rescissions			-97	-434						
(U)	Adjustments to Budget Years Since FY 2003 PBR				10,400	10,055					
(U)	Current Budget Submit/FY 2004 PBR			19,903	30,674	27,107		TBD			
(U)	Significant Program Changes:										
	- In FY03, AF DCGS received \$10.4M from the Cost of War Transfer Account for the development of increased/improved dissemination capabilities (\$8M) and commercial imagery integration (\$2.4M).										
	- Adjustments in FY02:										
	Added:										
	- Time Critical Targeting funding (\$1.25M)										
	- DCGS/Network Centric Collaborative Targeting and modelling and exercise support/integration (\$5.0M)										
	Removed:										
	- Eagle Vision funding transferred to PE 27277F (\$1.95M)										
	- Joint Services Imagery Processing System funding (\$3.0M)										
(U)	D. Other Program Funding Summary (\$ in Thousands)										
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	Other APPN										TBD
	Procurement line is classified.										
(U)	E. Acquisition Strategy										
	DCGS uses a spiral development program to field and upgrade the common ground station architecture. Systems and technology will be contracted for under a competitive Request for Proposal (RFP) process where possible.										
(U)	F. Schedule Profile										
				<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305208F Distributed Common Ground Systems				4826	
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Hardware/Software Development					10,592		10,887		5,676
(U)	System Engineering					6,202		3,234		8,880
(U)	System Integration					2,109		15,553		11,650
(U)	Program Management					1,000		1,000		901
(U)	Total					19,903		30,674		27,107
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon, Garland, TX	Multiple	2Q99	N/A	N/A	1,318	0	0		0	1,318
Northrop Grumman, Baltimore, MD	C, CPFF	2Q99	N/A	N/A	4,896	6,655	12,371	7,880	Continuing	TBD
Lockheed Martin, San Jose, CA	Multiple	2Q99	N/A	N/A	300	0	0	0	0	300
TBD for DCGS Upgrades and Migration		TBD	N/A	N/A	0	10,748	15,343	16,217	Continuing	TBD
Matra, Velizy, FR	Multiple	1Q00	N/A	N/A	1,384	0	0	0	0	1,384
Matra	SS, TBD	3Q00	N/A	N/A	11,886	0	0	0	0	11,886
Other Non-Prime Gov't Contracts	TBD	TBD	N/A	N/A	1,122	0	0	0	0	1,122
MITRE	SS,CPAF	2Q99	N/A	N/A	456	0	300	0	0	756
SAIC	SS, IDIQ	2Q99	N/A	N/A	535	1,000	700	1,000	0	3,235
Veridian	C,CPAF	4Q01	N/A	N/A	0	500	700	750	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0305208F Distributed Common Ground Systems					4826	
(U) <u>Performing Organizations Continued:</u>											
<u>Support and Management Organizations</u>											
Other Non-Prime Gov't	TBD	TBD	N/A	N/A	0	1,000	1,260	1,260	Continuing	TBD	
Contracts											
<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>	
					to FY 2002	FY 2002	FY 2003	FY 2004	Complete	Program	
<u>Subtotals</u>											
Subtotal Product Development					21,897	18,903	29,414	25,847	TBD	TBD	
Subtotal Support and Management					0	1,000	1,260	1,260	TBD	TBD	
Subtotal Test and Evaluation											
Total Project					21,897	19,903	30,674	27,107	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305906F NCMC - TW/AA System					PROJECT 4806	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4806	Combatant Commanders' Integrated Command and Control System (CCIC2S)	15,276	15,214	57,933	64,992	68,602	54,217	37,829	24,473	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

NOTE: In FY03 the project title 'N/UWSS' is being changed to 'CCIC2S.' As a result of the changes to the Unified Command Plan (UCP), the name change from N/UWSS to CCIC2S more correctly depicts end-user weapon system capabilities while addressing multiple command requirements.

(U) **A. Mission Description**
 The Combatant Commanders' Integrated Command and Control System (CCIC2S) provides the future standards-based, interoperable architecture for a North American Aerospace Defense Command/US Strategic Command (NORAD/USSTRATCOM) Battle Management/C4I system of systems that complies with the Network Centric Enterprise Services (NCES) Common Operating Environment (COE), Joint Technical Architecture (JTA) standards and provides for DoD/Joint Command and Control (C2) interoperability. New Space C2 capability will be integrated with this new architecture along with the evolving legacy mission capability to provide a fused battlespace picture. CCIC2S addresses all CINC NORAD and selected Combatant Commander USSTRATCOM missions including the Integrated Tactical Warning/Attack Assessment (ITW/AA) of missile, space, and air threats and Space Battle Management. CCIC2S will provide CINC NORAD and Combatant Commander USSTRATCOM a C2 system that is interoperable with the NORAD/USSTRATCOM warfighting functions and supporting/supported Combatant Commanders; and, is flexible to enable it to extend to meet evolving mission needs (e.g., Space-Based Infrared System (SBIRS), Ground-Based Midcourse Missile Defense (GMD), Space Control, Airborne Laser (ABL), Space-Based Laser, Computer Network Defense (CND) and Information Operations (IO)). The CCIC2S operational architecture will allow Combatant Commanders to better monitor world situations, make threat assessments, formulate Course of Actions (COAs), and develop force direction for synchronized warfighter operations. CCIC2S will consolidate the air/space battle management picture.

This program is consistent with the Air Force Long Range Plan, Joint Vision 2010, and the Defense Planning Guidance. The Joint Requirements Oversight Council (JROC) approved the N/UWSS (renamed CCIC2S in FY03) Mission Needs Statement (MNS) on 18 May 1998. Command and Control (C2) of Space Forces Requirements Document (ORD) was approved 17 Apr 2000.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		4806
PE NUMBER AND TITLE		
0305906F NCMC - TW/AA System		
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2002 (\$ in Thousands)</u>	
(U)	\$4,608	Continued Enterprise database infrastructure development (Core C2) and evolved architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP).
(U)	\$2,844	Continued C2 of space forces/threat warning development. (Air, Missile, and Space).
(U)	\$2,843	Continued evolution of C2 space battle manager through spiral development.
(U)	\$4,981	Continued preliminary CCIC2S system engineering to define the path for new and upgraded missions (e.g., SBIRS and GMD, Theater Battle Management Core System (TBMCS), IO, Intel and ITW/AA) impacting fixed and mobile C2 nodes. This included spiral development release planning, communications architecture, new technology insertion, integrated scheduling, test planning and test safety into the CCIC2S network.
(U)	\$15,276	Total
(U)	<u>FY 2003 (\$ in Thousands)</u>	
(U)	\$4,860	Continue Enterprise database infrastructure (Core C2) development and evolve architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP).
(U)	\$2,822	Continue C2 of space forces/threat warning development. (Air, Missile, and Space).
(U)	\$2,821	Continue evolution of C2 space battle manager through spiral development.
(U)	\$4,711	Continue preliminary CCIC2S system engineering to define the path for new and upgraded missions (e.g., SBIRS and GMD, TBMCS, IO, Intel and ITW/AA) impacting fixed and mobile C2 nodes. This will include spiral development release planning, communications architecture, new technology insertion, integrated scheduling, test planning and test safety into the CCIC2S network.
(U)	\$15,214	Total
(U)	<u>FY 2004 (\$ in Thousands)</u>	
(U)	\$36,688	Continue Enterprise network infrastructure (Core C2) development and evolve architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP).
(U)	\$1,945	Continue Air Mission capability incremental development supporting delivery of Air Mission/Theater Battle Management Core System (TBMCS)/GCCS.
(U)	\$9,493	Continue Missile Warning mission incremental development by providing GCCS-based core missile warning capability adaptable to multiple operating locations and interoperable with other National Command Centers.
(U)	\$6,163	Continue Space Surveillance mission development providing improved object tracking and cataloging, and collision avoidance planning of current and future space platforms.
(U)	\$3,644	Continue Space Defense/Control mission development to include support of space mission capability expansion in the AOCs for the Theater
Project 4806		Exhibit R-2 (PE 0305906F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2003**

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305906F NCMC - TW/AA System	PROJECT 4806
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(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) OPAF (PE 0305906F, Cheyenne Mountain Complex, P-1 Line Item #42, BA 3)	30,660	13,674	19,512	17,765	19,828	13,374	17,487	12,919	Continuing	TBD
(U) OPAF (PE 0305906F, Spares and Repair Parts, P-1 Line Item #104, BA 5)	677	657	6,751	655	676	691	705	716	Continuing	TBD

(U) **E. Acquisition Strategy**

CCIC2S employs an incremental development acquisition strategy which enables rapid development and fielding of capability increments in response to validated requirements. Using an incremental development acquisition strategy is critical in a hardware/software intensive C2 system where 12-24 month technology cycles are common.

CCIC2S uses a performance-oriented contracting strategy with industry. Contract was awarded in FY00 after full and open competition.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Space Surveillance/Defense incremental deliveries (1)		*				X				X		
(U) GMD - BMC3 ITW/AA Integration incremental deliveries (2)												
(U) ITW/AA Air Mission incremental deliveries (3)				*				X				
(U) ITW/AA Missile Warning incremental deliveries (4)												
(U) Core C2 incremental deliveries (5)		*			*			X			X	X

* Indicates incremental delivery completion/X indicates scheduled incremental delivery

1 - C2 of Space Forces expands to become Space Surveillance/Defense in FY04 with yearly deliveries starting in FY05.

2 - GMD-BMC2 ITW/AA Integration reduced to planning activities in FY03 (with no specified deliveries).

3 - Two previously scheduled FY03 deliveries have been consolidated for efficiency into a single Air Mission Release 1 scheduled for May 03. Similarly, TBMCS

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BUDGET ACTIVITY 07 - Operational System Development						PE NUMBER AND TITLE 0305906F NCMC - TW/AA System						PROJECT 4806			
(U) <u>F. Schedule Profile Continued</u>															
				<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<p>integration into the Air Mission has been consolidated into a single Air Mission Release 2 scheduled for delivery in 1QTR FY05. FY04 is dedicated to design and development of Air Mission Release 2.</p> <p>4 - Missile Warning Release 1 design and development occurs FY02-04 with delivery in FY05.</p> <p>5 - Core C2 development replaces System Architecture as there are no incremental system deliveries directly associated with System Architecture development. Core C2 deliveries in FY03 modified to support delivery schedule for Air Mission Release 1. Core C2 deliveries in FY04 support Missile Warning Release 1 delivery in FY05.</p>															
Project 4806				Page 5 of 7 Pages				Exhibit R-2 (PE 0305906F)							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0305906F NCMC - TW/AA System			4806			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Systems Engineering					12,016		11,833		54,064	
(U)	FFRDC					2,300		2,804		2,915	
(U)	A&AS					347		464		477	
(U)	Program Support					613		113		477	
(U)	Total					15,276		15,214		57,933	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin	CP/AF	Sep 00	TBD	TBD	14,192	12,016	11,833	54,064	Continuing	TBD
	Systems Engineering Development & Integration (SEDI)	MIPR	Jan 00	5,631	5,631	5,631	0	0	0	0	5,631
<u>Support and Management Organizations</u>											
	FFRDC	CP/FF	Jan 00	TBD	TBD	2,382	2,300	2,804	2,915	Continuing	TBD
	A&AS	CP/FF	Jan 00	TBD	TBD	917	347	464	477	Continuing	TBD
	Program Support	Various	Various	TBD	TBD	162	613	113	477	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
None											
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
Project 4806											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305906F NCMC - TW/AA System			PROJECT 4806		
(U) Government Furnished Property Continued:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				19,823	12,016	11,833	54,064	TBD	TBD
Subtotal Support and Management				3,461	3,260	3,381	3,869	TBD	TBD
Subtotal Test and Evaluation									
Total Project				23,284	15,276	15,214	57,933	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK						
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	21,935	21,507	118,234	162,262	151,248	214,014	402,617	429,703	Continuing	TBD
4279 Have Stare Radar	8,470	0	0	0	0	0	0	0	0	131,273
4791 GEODSS Sustainment	3,149	0	0	0	0	0	0	0	0	10,031
4930 Space Based Space Surveillance	2,008	9,810	78,959	109,519	84,731	115,605	196,181	204,870	Continuing	TBD
5011 Space Situational Awareness Initiatives	8,308	11,697	15,479	12,118	16,266	10,938	9,312	7,581	Continuing	TBD
A008 Sensor Service Life Extension Programs (Sensor SLEPs)	0	0	19,867	31,761	25,467	30,001	9,697	0	0	116,793
A009 Orbital Deep Space Imager (ODSI)	0	0	3,929	8,864	24,784	57,470	187,427	217,252	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>FY03: Project 5011, Space Situational Awareness Initiatives, was changed from Project 5010 (same name) to correct an administrative error. This action did not change program content.</p> <p>FY04: Project A008, Sensor Service Life Extension Programs (Sensor SLEPs), efforts were transferred from Project 5011, Space Situational Awareness Initiatives (this PE), in order to ensure positive tracking for the SLEP work.</p> <p>FY04: Project A009, Orbital Deep Space Imager (ODSI), activities were transferred from Project 5011, Space Situational Awareness Initiatives (this PE), in order to ensure positive tracking for the ODSI work. ODSI is a new start this year.</p>										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305910F SPACETRACK**(U) A. Mission Description**

The SPACETRACK program element represents a worldwide Space Surveillance Network (SSN) of dedicated, collateral, and contributing electro-optical, passive radio frequency (RF) and radar sensors. The SSN is tasked to provide space object identification and cataloging, satellite attack warning, timely notification to U.S. forces of satellite fly-over, space treaty monitoring, and scientific and technical intelligence gathering. The continued increase in satellite and orbital debris populations, as well as the increasing diversity in launch trajectories, non-standard orbits, and geosynchronous altitudes, necessitates continued modernization of the SSN to meet existing and future requirements and ensure their cost-effective supportability.

The HAVE STARE radar is a high resolution X-band tracking and imaging radar with a 27 meter mechanical dish antenna. The system was sited at Vardo, Norway, as a dedicated space surveillance sensor to support the mission of space object catalog maintenance and mission payload assessment. The project is complete as of the end of FY02.

The Ground-Based Electro Optical Deep Space Surveillance (GEODSS) Sustainment project developed and now fields ten Charge-Coupled Device (CCD) sensors for the GEODSS System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. In addition, this project funds the purchase and integration of ten Modular Precision Angular Control Systems (MPACS), as well as sensor controller hardware and associated software.

The Space Based Space Surveillance (SBSS) project is an effort to acquire a constellation of satellites to conduct space surveillance. A constellation of space-based space surveillance satellites will provide timely space situational awareness to meet future space control operations. The SBSS is a follow-on to a successful Advanced Concept Technology Demonstration (ACTD) of the Mid-Course Space Experiment/Space Based Visible (MSX/SBV) sensor.

The Space Situational Awareness (SSA) initiatives are a collection of linked development efforts to accelerate the evolution of the Space Surveillance Network (SSN) and its command and control (C2) infrastructure into a more capable Air Force SSA Operational Architecture to build and disseminate the Space Common Operational Picture (Space COP) to the warfighter. SSA is the critical, enabling mission element supporting the Offensive Counterspace and Defensive Counterspace missions within Space Control.

The SPACETRACK sensor Service Life Extension Programs (SLEPs) extend the life and upgrade the hardware and software to improve system operability and sustainability of space object identification and imaging mission of US Strategic Command at the Eglin and Haystack radar systems.

The Navy Space Surveillance Fence is a dedicated sensor scheduled to be transferred from the Navy to the Air Force in FY04 that can detect earth orbiting objects out to 15,000 nautical miles (Project A008, Sensor Service Life Extension Programs).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development

0305910F SPACETRACK

(U) **A. Mission Description Continued**

The primary mission of the Orbital Deep Space Imager (ODSI) is to conduct Space Object Identification (SOI) providing high-resolution imagery of other geosynchronous satellites and near-real time, routine imagery in support of overall battle space awareness and Defensive Counterspace operations.

(U) **B. Budget Activity Justification**

All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modifications to operational sensor network sites.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	23,289	21,917	66,632	TBD
(U) Appropriated Value	23,691	21,917		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-402	-316		
b. Small Business Innovative Research	-1,256			
c. Omnibus or Other Above Threshold Reprogram		-94		
d. Below Threshold Reprogram				
e. Rescissions	-98			
(U) Adjustments to Budget Years Since FY 2003 PBR			51,602	
(U) Current Budget Submit/FY 2004 PBR	21,935	21,507	118,234	TBD

(U) **Significant Program Changes:**

1. FY04: Project A008, Sensor Service Life Extension Programs (Sensor SLEPs) efforts were transferred from Project 5011, Space Situational Awareness Initiatives (this PE).
2. FY04: Project A009, Orbital Deep Space Imager (ODSI), activities were transferred from Project 5011, Space Situational Awareness Initiatives (this PE).
3. FY04: Funding was added by OSD to accelerate the first Space Based Space Surveillance launch from FY08 to FY06.
4. FY04: OSD directed transfer of Navy Fence (PE 35927N) to Air Force (PE 35910F) starting in FY04 (\$1M).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT 4279		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4279	Have Stare Radar		8,470	0	0	0	0	0	0	0	0	131,273

(U) A. Mission Description

The HAVE STARE radar (FPS-129) was transferred from the intelligence budget in FY93 at the direction of Congress. The Air Force has identified a requirement for the HAVE STARE system and has programmed funding in this program element to complete development and to deploy the system. The radar is a high resolution X-band tracking and imaging radar with a 27 meter mechanical dish antenna. The system has been sited at Vardø, Norway, as a dedicated space surveillance sensor to support the mission of space object catalog maintenance and mission payload assessment. System integration and checkout was completed in FY01. Formal system testing and evaluation were completed in May 02. The system is now providing daily operational data to Air Force Space Command (AFSPC). Documentation for approval of Initial Operational Capability (IOC) is in coordination and approval is anticipated in the second quarter of FY03.

All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modification to operational sensor network sites.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/planned program
- (U) \$7,720 Completed formal test and evaluation
- (U) \$750 Completed logistics tasks
- (U) \$8,470 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/planned program
- (U) \$0 Complete residual tasks with FY02 funds
- (U) \$0 Total

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishments/planned program
- (U) \$0 No Activity
- (U) \$0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																																																				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4279																																																																																																			
<p>(U) <u>B. Project Change Summary</u> FY02: \$2.5M reprogrammed from GEODDS Sustainment (Project 674791) to correct system deficiencies and complete project. FY03: System Initial Operational Capability slipped to second quarter of FY03 due to correcting deficiencies identified during Force Development Evaluation (FDE).</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> The existing contract with Raytheon was modified Jul 02 to extend the period of performance to Apr 03 in order to complete residual system activation tasks and to deliver remaining logistics spares and technical documentation. No FY03/FY04 funds are requested.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</u></th> <th colspan="4"><u>FY 2004</u></th> </tr> <tr> <th></th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> <th>1</th><th>2</th><th>3</th><th>4</th> </tr> </thead> <tbody> <tr> <td>(U) Formal System Testing Completed</td> <td></td><td></td><td>*</td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) System Operational Acceptance</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td>*</td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) System Initial Operational Capability</td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td>X</td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>* = Complete event X = Planned event</p>											<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) None												<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Formal System Testing Completed			*										(U) System Operational Acceptance							*						(U) System Initial Operational Capability								X				
	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																	
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Project 4279			Page 5 of 31 Pages				Exhibit R-2A (PE 0305910F)																																																																																																				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4279		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Site preparation and support					1,400		0		0
(U)	Formal system testing					4,139		0		0
(U)	Complete open development and testing items					2,500		0		0
(U)	SPO support					431		0		0
(U)	Total					8,470		0		0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Raytheon Elec Sys	C/CPIF/AF	Various	81,000	81,000	76,878	4,191	0	0	0	81,069
ITT Industries	PR	Sep 02	1,416	1,416	0	1,416	0	0	0	1,416
Site Support	Various	Various	N/A	N/A	25,800	1,400	0	0	0	27,200
Other PY Organizations	Various	Various	N/A	N/A	2,774	0	0	0	0	2,774
Misc	Various	Various	N/A	N/A	1,248	85	0	0	0	1,333
Prior years data reflects costs since FY94										
<u>Support and Management Organizations</u>										
MITRE	SS/PR	Various	N/A	N/A	5,551	150	0	0	0	5,701
A&AS	C/PR	Various	N/A	N/A	8,413	614	0	0	0	9,027
Lincoln Lab	SS/PR	Various	N/A	N/A	656	58	0	0	0	714
Program Office	Various	Various	N/A	N/A	1,247	436	0	0	0	1,683
Misc	Various	Various	N/A	N/A	236	120	0	0	0	356
Prior years data reflects costs since FY94										
<u>Test and Evaluation Organizations</u>										
None										
Project 4279					Page 6 of 31 Pages	Exhibit R-3 (PE 0305910F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4279		
(U) Government Furnished Property:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				106,700	7,092	0	0	0	113,792
Subtotal Support and Management				16,103	1,378	0	0	0	17,481
Subtotal Test and Evaluation									
Total Project				122,803	8,470	0	0	0	131,273
Prior years data reflects costs since FY94									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK						PROJECT 4791	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4791 GEODSS Sustainment	3,149	0	0	0	0	0	0	0	0	10,031	

(U) A. Mission Description

The GEODSS Sustainment project began in FY00 to develop and field ten Charge-Coupled Device (CCD) sensors for the Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) System, located at Socorro, NM; Diego Garcia, Indian Ocean; and Maui, Hawaii. The project includes associated software changes to the Optical, Command, Control & Communications (OC3F) at Edwards AFB, CA. In addition, this project purchases and integrates ten replacement Modular Precision Angular Control Systems (MPACS), and funds associated logistics requirements, technical data and training. The project develops the first components and installs them at the test unit at Yoder, CO. Follow-on CCD cameras and MPACS will be produced and installed using Space Track Modification funds (BP83). This project, with the completed GEODSS Modification Program, will result in more than double the throughput and search rate of the legacy system. Without CCD camera replacement, the entire GEODSS system will be unusable in the FY05 time-frame, as mission critical Ebsicon tubes are no longer manufactured or supported by any vendor and the current supply of spares will run out by the end of 2004. This would result in loss of geosynchronous space situational awareness and less ability to assess the space order of battle of a potential aggressor.

All of these projects are Budget 7, Operational Systems Development, because they involve development of or modifications to operational sensor network sites.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/planned program
- (U) \$1,649** Contingency & closeout efforts on development contractor
- (U) \$1,500** Completed prototype camera and testing
- (U) \$3,149** Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0** Accomplishments/planned program
- (U) \$0** No Activity - RDT&E efforts completed in FY02
- (U) \$0** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT 4791	
(U) A. Mission Description Continued											
(U) FY 2004 (\$ in Thousands)											
(U) \$0 Accomplishments/planned program											
(U) \$0 No Activity											
(U) \$0 Total											
(U) B. Project Change Summary											
FY02: \$2.5M reprogrammed to HAVE STARE (Project 674279).											
FY03: GEODSS project slipped due to unforeseen technical problems associated with the production process of the Charge-Coupled Device (CCD).											
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) Other APPN									0		0
(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #67, BA 3)*	8,702	2,406	5,069	0	0	0	0	0			16,177
(U) OPAF (PE 0305910F, Spares and Repair Parts,P-1 Line Item #106, BA 5)*	27	4,159	1,993	220	0	0	0	0	0		6,399
* For the GEODSS Sustainment project only											
(U) D. Acquisition Strategy											
The contract for the GEODSS Sustainment project was awarded after full and open competition											
(U) E. Schedule Profile											
				<u>FY 2002</u>				<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) First Article CCD Delivery								X			
(U) First Article Test (Yoder Test Site) (funded with OPAF)									X		
(U) First Article Kit Acceptance (Site 1, Socorro NM) (funded with OPAF)										X	
Project 4791											
Page 9 of 31 Pages											
Exhibit R-2A (PE 0305910F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4791			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	System Engineering					86		0		0	
(U)	Hardware Development					300		0		0	
(U)	Program Office Support					2,763		0		0	
(U)	Total					3,149		0		0	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</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>											
	TRW, Inc.	SS/CPAF/PR	Mar 00	5,660	5,660	5,274	386	0	0	0	5,660
<u>Support and Management Organizations</u>											
	MITRE	SS/PR	Jan 00	1,636	1,636	700	936	0	0	0	1,636
	MIT/Lincoln Lab	SS/PR	Feb 00	365	365	365	0	0	0	0	365
	A&AS	C/PR	Mar 00	1,876	1,876	400	1,476	0	0	0	1,876
	SPO	Various	Jan 00	494	494	143	351	0	0	0	494
<u>Test and Evaluation Organizations</u>											
None											
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
None											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305910F SPACETRACK		4791	
(U) Government Furnished Property Continued:						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	5,274	386	0	0	0	5,660
Subtotal Support and Management	1,608	2,763	0	0	0	4,371
Subtotal Test and Evaluation						
Total Project	6,882	3,149	0	0	0	10,031

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT 4930	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4930	Space Based Space Surveillance	2,008	9,810	78,959	109,519	84,731	115,605	196,181	204,870	Continuing	TBD
<p>(U) <u>A. Mission Description</u> The primary mission of Space Based Space Surveillance (SBSS) is to conduct timely detection and tracking of all man-made objects in orbit around the earth. This includes collecting, processing, and communicating satellite metric and Space Object Identification (SOI) data. The SBSS will support the attainment of Space Surveillance Key Performance Parameters (KPPs) outlined in the USSPACECOM Capstone Requirements Document (CRD) for Space Control. Additionally, this program continues with systems integration and test studies and related support activities.</p> <p>All of these projects are Budget Activity 7, Operational System Development, because they involve development of or modifications to operational sensor network sites.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$2,008 Initiated Analysis of Alternatives (AoA) (U) \$2,008 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$1,547 Complete AoA (U) \$6,023 Conduct Concept Definition Studies (U) \$2,240 Begin Pre-Acquisition preparations (U) \$9,810 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$19,740 Begin technology risk reduction activities (acceleration of end-to-end payload development stray light rejection options and radiation tolerant parts) (U) \$48,954 Complete concept definition; develop costing methodologies and conduct modeling and simulation analysis of system performance and utility; conduct system engineering and architecture development; develop mission management concepts; conduct preliminary design for bus and payload; initiate software architecture development and begin test and evaluation program development</p>											
Project 4930			Page 13 of 31 Pages				Exhibit R-2A (PE 0305910F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																																																																																								
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4930																																																																																																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands) Continued</u></p> <p>(U) \$6,317 Begin acquisition program support (acquisition planning, schedule management, requirements development, configuration management and financial management support)</p> <p>(U) \$3,948 Begin interoperability development (horizontal integration into Space Control Systems Architecture)</p> <p>(U) \$78,959 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>FY 2008</u></th> <th style="text-align: center;"><u>FY 2009</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) None</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> The project follows an incremental acquisition path. Pre-Acquisition (Key Decision Point (KDP) B) begins in FY04 to accomplish system design and development for an FY06 launch. Contract vehicle is the Mission Area Prime Integration Contract (MAPIC).</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> <th colspan="3" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Complete objective system AoA</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">*</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Begin Concept Definition studies</td> <td></td><td></td><td></td><td></td><td style="text-align: center;">*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) KDP B</td> <td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Contract award</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) System definition review</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td> </tr> <tr> <td>(U) Preliminary design review</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td> </tr> </tbody> </table> <p>* = Complete event X = Planned event</p>											<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) None												<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Complete objective system AoA						*							(U) Begin Concept Definition studies					*								(U) KDP B							X						(U) Contract award								X					(U) System definition review										X			(U) Preliminary design review												X
	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																																																					
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Project 4930			Page 14 of 31 Pages				Exhibit R-2A (PE 0305910F)																																																																																																																																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4930			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>	
(U)	Analysis of Alternatives (AoA)				1,864		1,310			0	
(U)	Concept Definition Studies				0		5,120			0	
(U)	Pre-Acquisition preparations				0		1,900			0	
(U)	Technology risk reduction activities				0		0			19,740	
(U)	Complete concept definition				0		0			52,902	
(U)	Program Office Support				144		1,480			6,317	
(U)	Total				2,008		9,810			78,959	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Multiple contractors	MAPIC	Feb 02	TBD	TBD	0	1,864	8,330	72,642	Continuing	TBD
<u>Support and Management Organizations</u>											
	Program Office	N/A	N/A	N/A	N/A	0	144	1,480	6,317	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	None										
(U) <u>Government Furnished Property:</u>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305910F SPACETRACK		4930	
(U) Government Furnished Property Continued:						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
				<u>Budget to</u>		<u>Total</u>
				<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			0	1,864	8,330	72,642
Subtotal Support and Management			0	144	1,480	6,317
Subtotal Test and Evaluation						
Total Project			0	2,008	9,810	78,959
						TBD
						TBD
						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT 5011	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
5011 Space Situational Awareness Initiatives	8,308	11,697	15,479	12,118	16,266	10,938	9,312	7,581	Continuing	TBD	
<p>FY04: Service Life Extension Programs (SLEPs) efforts were transferred from Project 5011, Space Situational Awareness Initiatives to Project A008 (Sensor SLEPs) this PE.</p> <p>FY04: Orbital Deep Space Imager (ODSI) activities were transferred from Project 5011, Space Situational Awareness Initiatives to Project A009 (ODSI) this PE.</p> <p>(U) <u>A. Mission Description</u> Space Situation Awareness (SSA) Initiatives are a collection of efforts to accelerate the evolution of the Space Surveillance Network (SSN) into a more capable Space Situation Awareness Network (SSAN). The SSAN is a critical element to maintaining space control. The Space Control Broad Area Review (BAR), Space Surveillance Task Force (SSTF) commissioned by the DepSecDef, and the Space Commission have all recommended improved space situation awareness capabilities. The efforts described below address several of the recommendations from the BAR, SSTF and the Commission.</p> <p>The first effort focuses on establishing an innovative office, the Space Situation Awareness Integration Office (SSAIO), to facilitate architecture development, investment planning, requirements allocation, and systems integration of SSA across DoD and other USG organizations/agencies. Deliverables for this effort include DoD Architecture compliant operational and system views focused on the short and mid-term SSA architecture. This effort is fully coordinated with the National Security Space Architecture (NSSA) office and implements the NSSA Space Situation Awareness roadmap.</p> <p>The second effort, SSA Command & Control (C2), funds the incremental development of improved C2 and data fusion capabilities (leveraging the spiral development efforts of the Integrated Space C2 architecture).</p> <p>The third effort involves augmenting deep space surveillance capability by deploying remotely operated small aperture (commercially available or government-owned) telescopes. This program was cancelled due to security and operational concerns with concept of operations of geographically dispersed and unmanned overseas ground stations.</p> <p>The fourth effort involves continuing Concept and Technology Development for sensor Service Life Extension Programs (SLEPs) of critical existing legacy systems. The SPACETRACK Sensor SLEPs extend the life and upgrade the hardware and software to improve system operability and sustainability of the space object identification and imaging mission of US Space Command at the Eglin and Haystack radars.</p> <p>All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modifications to operational sensor network</p>											
Project 5011			Page 17 of 31 Pages				Exhibit R-2A (PE 0305910F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development		February 2003
PE NUMBER AND TITLE		PROJECT
0305910F SPACETRACK		5011
(U) <u>A. Mission Description Continued</u>		
sites.		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U)	\$0	Accomplishments/planned program
(U)	\$2,457	SSAIO stand-up and initial operations in Colorado Springs
(U)	\$3,348	SSA C2: Began space surveillance analysis tool improvements and SSN tracking/capacity studies
(U)	\$2,503	Deep space surveillance augmentation - System Development
(U)	\$8,308	Total
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U)	\$0	Accomplishments/planned program
(U)	\$1,500	Provide R&D support to Air Force Space Command funded SSAIO activities to include Space Surveillance Network Analysis Model (SSNAM) as required
(U)	\$5,485	SSA C2: Continue space surveillance analysis tool and SSN tracking/capacity improvements
(U)	\$1,100	Continue System Development of deep space surveillance augmentation
(U)	\$2,012	Begin Haystack Service Life Extension Program (SLEP) system design and engineering
(U)	\$1,600	Eglin SLEP engineering trade-off analysis and detailed technical proposal
(U)	\$11,697	Total
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U)	\$0	Accomplishments/planned program
(U)	\$0	Deep space surveillance augmentation cancelled
(U)	\$1,500	SSAIO: Provide R&D support for modeling, simulation, and analyses to include Space Surveillance Network Analysis Model (SSNAM) as required
(U)	\$2,800	SSA C2: Data fusion tools
(U)	\$2,300	SSA C2: Satellite position accuracy upgrades
(U)	\$5,265	SSA C2: Data processing and timeliness enhancements
(U)	\$2,300	SSA C2: New sensor integration
(U)	\$1,314	SSA C2: Streamline data dissemination
(U)	\$15,479	Total
Project 5011		
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Exhibit R-2A (PE 0305910F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK		PROJECT 5011																																																																
<p>(U) <u>B. Project Change Summary</u></p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>FY 2008</u></th> <th style="width:10%;"><u>FY 2009</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #P-67, BA3)</td> <td></td> <td style="text-align: right;">3,641</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) OPAF (PE 0305910F, Spares and Repair Parts, P-1 Line Item #P-106, BA5)</td> <td></td> <td style="text-align: right;">1,743</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u></p> <p>In FY02, the SSAIO project stood up the office in Colorado Springs, CO, began reviewing/updating FY00 SSTF results, began developing a DoD compliant short to mid-term SSA architecture, and initiated discussions with the Services and USG agencies. This effort will provide R&D support to Air Force Space Command SSAIO activities in FY03 through the use of engineering/study contracts.</p> <p>SSA C2 FY02 funding began to develop capabilities for improved processing, accuracy, analysis, data fusion and dissemination of space situational data (Space COP) evolving to an integrated Air Force SSA operational architecture. The SSA C2 Concept & Technology Development continues in FY04. All development either uses the existing Integrated Space Command and Control (ISC2) contract or uses other contractors that develop capabilities that will be integrated into or easily interfaced with the operational architecture the ISC2 contract produces.</p> <p>The effort to augment deep space surveillance capability began in FY02 to develop visible wavelength sensors on small aperture telescopes using sensor technology similar to the upgraded GEODSS telescopes. System Development continued in FY03; however in FY03, the Air Force cancelled all FY04 and beyond efforts.</p> <p>In FY03, Concept & Technology Development for sensor Service Life Extension programs (SLEPs) begins in project 675011. The Eglin SLEP will be performed using the existing SENSOR contract with ITT Industries System Division; Colorado Springs, CO. The HAYSTACK SLEP will be performed using the ESC contract with Lincoln Laboratories; Hanscom AFB, MA.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="width:20%; text-align: center;"><u>FY 2002</u></th> <th style="width:20%; text-align: center;"><u>FY 2003</u></th> <th style="width:20%; text-align: center;"><u>FY 2004</u></th> </tr> </thead> <tbody> <tr> <td>Project 5011</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) Other APPN											(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #P-67, BA3)		3,641									(U) OPAF (PE 0305910F, Spares and Repair Parts, P-1 Line Item #P-106, BA5)		1,743										<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	Project 5011			
	<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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																													
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Project 5011																																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305910F SPACETRACK					5011				
(U) E. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) SSAIO - Office Standup		*												
(U) SSA C2 - Analysis tool improvements and SSN studies begin		*												
(U) Haystack system development plan								X						
(U) Eglin trade-off analysis report						X								
(U) Eglin detailed technical proposal								X						
(U) SSA C2 - Data fusion tools, Increment 1 delivery									X					
(U) SSA C2 - Satellite position accuracy upgrades, initial delivery										X				
(U) SSA C2 - Data processing and timeliness upgrades, initial delivery												X		
* = Complete event														
X = Planned event														
Project 5011					Page 20 of 31 Pages					Exhibit R-2A (PE 0305910F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305910F SPACETRACK	PROJECT 5011
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(U) A. Project Cost Breakdown (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) SSAIO Stand-up and initial operations in Colorado Springs	2,457	1,500	1,500
(U) SSA C2 Concept & Technology Development	3,321	5,485	13,715
(U) Deep space surveillance augmentation - System Development	2,464	1,045	0
(U) Sensor SLEPs Concept & Technology Development	0	1,853	0
(U) Sensor SLEPs System Engineering	0	1,464	0
(U) Program Office Support	66	350	264
(U) Total	8,308	11,697	15,479

(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)

(U) Performing Organizations:

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin Mission Systems	PR/Mod	Jul 02	15,000	15,000	0	2,143	2,700	8,915	Continuing	TBD
ITT Industries	PR	Sep 02	4,000	4,000	0	1	1,450	1,500	Continuing	TBD
MIT/Lincoln Laboratories	PR	Jul 02	2,000	2,000	0	1,940	1,500	665	Continuing	TBD
SI International	MIPR	Jul 02	400	400	0	60	125	200	Continuing	TBD
Titan/Sencom	PR	Jul 02	700	700	0	381	250	50	Continuing	TBD
SAIC	MIPR	Jul 02	571	571	0	435	100	20	Continuing	TBD
STA	MIPR	Jul 02	100	100	0	54	20	20	Continuing	TBD
GSA	MIPR	Jul 02	3,800	3,800	0	1,111	1,500	1,150	Continuing	TBD
MITRE	PR	Jul 02	4,000	4,000	0	1,101	1,500	1,030	Continuing	TBD
Contractors (various)	MIPR/PR	Jul 02	6,000	6,000	0	1,016	1,573	1,305	Continuing	TBD
ASSPC SETA support	PR/MIPR	N/A	750	750	0	0	350	400	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0305910F SPACETRACK					5011	
(U) <u>Performing Organizations Continued:</u>											
<u>Support and Management Organizations</u>											
MITRE	PR	Jul 02	300	300	0	0	250	40	Continuing	TBD	
A&AS	PR	Jul 02	740	740	0	0	0	50	Continuing	TBD	
DISA	MIPR	Jul 02	130	130	0	27	47	47	Continuing	TBD	
SPO	MIPR/PR/V	Jul 02	305	305	0	39	332	87	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
None											
(U) <u>Government Furnished Property:</u>											
<u>Contract</u>											
<u>Method/Type</u>											
<u>Award or</u>											
<u>Item</u>											
<u>or Funding</u>											
<u>Obligation</u>											
<u>Delivery</u>											
<u>Description</u>											
<u>Vehicle</u>											
<u>Date</u>											
<u>Date</u>											
<u>Total Prior</u>											
<u>Budget</u>											
<u>Budget</u>											
<u>Budget</u>											
<u>Budget</u>											
<u>Budget to</u>											
<u>Complete</u>											
<u>Total</u>											
<u>Program</u>											
<u>Product Development Property</u>											
None											
<u>Support and Management Property</u>											
None											
<u>Test and Evaluation Property</u>											
None											
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					0	8,242	11,068	15,255	TBD	TBD	
Subtotal Support and Management					0	66	629	224	TBD	TBD	
Subtotal Test and Evaluation											
Total Project					0	8,308	11,697	15,479	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT A008	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
A008	Sensor Service Life Extension Programs (Sensor SLEPs)	0	0	19,867	31,761	25,467	30,001	9,697	0	0	116,793
<p>FY 2004: Project 5011, Space Situational Awareness Initiatives, was changed to separate activities for ease of description and execution by transferring the Service Life Extension Project activities into Project A008, Sensor Service Life Extension Project with no change in funding.</p> <p>FY 2004: Beginning this year the Navy Space Surveillance Fence (PE 35927N) will transfer from the Navy to the Air Force.</p> <p>(U) <u>A. Mission Description</u></p> <p>The SpaceTrack sensor Service Life Extension Programs (SLEPs) extend the life and upgrade the hardware and software to improve system operability and sustainability of space object identification and imaging mission of US Strategic Command. FY03 activities began the concept and technology development for service life extension projects at the Eglin and Haystack radar systems. The Eglin radar is a one-of-a-kind phased array radar located at Eglin AFB, FL. The radar performs near-earth and deep-space object tracking in direct support of the US Strategic Command. The Eglin SLEP replaces unsupportable hardware and incorporates modern architecture software.</p> <p>The Haystack radar is a one-of-a-kind X-band imaging radar located at Westford, MA that supports US Strategic Command with satellite images. The Haystack radar SLEP project, also known as the Haystack Ultra-wideband Satellite Imaging Radar (HUSIR), will have its antenna modified and a high power amplifier developed to operate in the W-band. This modification is required to meet Space Control capstone requirements for higher resolution imagery of orbital objects. This SLEP will also develop new antenna and signal processing hardware. The data processing hardware and software will also be modernized to meet the new space control requirements.</p> <p>The Navy Space Surveillance Fence is comprised of various geographically separated CONUS based receivers (6) and transmitters (3) located across the southern United States. The Navy Space Surveillance Fence is a dedicated sensor that can detect objects in orbit around the earth out to an effective range of 15,000 nautical miles. This project is being transferred from the Navy to the Air Force at OSD direction.</p> <p>All of these projects are Budget Activity 7 , Operational Systems Development, because they involve development of or modifications to operational sensor network sites.</p>											
Project A008			Page 23 of 31 Pages				Exhibit R-2A (PE 0305910F)				

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT A008																																												
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/planned program</p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/planned program</p> <p>(U) \$0 Activities included in Project 5011</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/planned program</p> <p>(U) \$2,209 Haystack engineering design and project planning</p> <p>(U) \$16,658 Eglin SLEP engineering and software development</p> <p>(U) \$1,000 Perform S-band upgrade study for Navy Fence</p> <p>(U) \$19,867 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>Funding realigned in FY04 from Space Track (Project 5011), Space Situational Awareness Initiatives, to establish a separate project code.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>FY 2008</u></th> <th style="width:10%;"><u>FY 2009</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #P-67, BA 3)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">9,553</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u></p> <p>In FY04 the SLEP projects will contract for system engineering of hardware and software architecture. The hardware and software will be developed over FY05-06 with on site system integration, installation, and checkout in FY 06-07. Formal system test and operational acceptance is planned for FY08.</p>									<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		(U) Other APPN											(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #P-67, BA 3)	0	0	9,553	0	0	0	0	0	Continuing	TBD
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>																																										
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(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #P-67, BA 3)	0	0	9,553	0	0	0	0	0	Continuing	TBD																																									
Project A008		Page 24 of 31 Pages				Exhibit R-2A (PE 0305910F)																																													

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT A008			
(U) E. Schedule Profile													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Haystack system development plan								X				
(U)	Eglin trade-off analysis report						X						
(U)	Eglin detailed technical proposal								X				
(U)	Eglin system design review												X
(U)	S-band upgrade study for Navy Fence										X		
	* = Complete event												
	X = Planned event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT A008			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	System Engineering					0		0		4,500	
(U)	Hardware Development					0		0		4,209	
(U)	Software Development					0		0		9,708	
(U)	Program Office Support					0		0		1,450	
(U)	Total					0		0		19,867	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	ITT Industries	PR	Sep 02	16,550	16,550	0	0	0	16,208	Continuing	TBD
	Lincoln Laboratories	PR	Jul 02	3,900	3,900	0	0	0	1,859	Continuing	TBD
<u>Support and Management Organizations</u>											
	A&As					0	0	0	1,050	Continuing	TBD
	Program Office					0	0	0	750	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	None										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305910F SPACETRACK		A008	
(U) Government Furnished Property Continued:						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
					<u>Budget to</u>	<u>Total</u>
					<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			0	0	0	18,067
Subtotal Support and Management			0	0	0	1,800
Subtotal Test and Evaluation						
Total Project			0	0	0	19,867
					TBD	TBD
					TBD	TBD
					TBD	TBD

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK					PROJECT A009	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
A009	Orbital Deep Space Imager (ODSI)	0	0	3,929	8,864	24,784	57,470	187,427	217,252	Continuing	TBD
<p>FY 2004: Project 5011, Space Situational Awareness Initiatives, was changed to separate activities for ease of description and execution by transferring the Orbital Deep Space Imager activities into Project A009, Orbital Deep Space Imager (ODSI), with no change in funding. ODSI is a FY04 new start.</p> <p>(U) <u>A. Mission Description</u> The primary mission of the Orbital Deep Space Imager (ODSI) is to provide high-resolution imagery of other Geosynchronous satellites and near-real time, routine imagery in support of overall battle space awareness and Defensive Counterspace operations (battle damage assessment/anomaly resolution). ODSI will support the satisfaction of timeliness and characterization requirements as outlined in the USSPACECOM Space Control Capstone Requirements Document (CRD).</p> <p>All of these projects are Budget Activity 7, Operational Systems Development, because they involve development of or modification to operational sensor network sites.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/planned program (U) \$3,929 Begin Concept Definition Studies (KDP A) (U) \$3,929 Total</p> <p>(U) <u>B. Project Change Summary</u> FY04 new start.</p>											
Project A009			Page 28 of 31 Pages				Exhibit R-2A (PE 0305910F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK				PROJECT A009			
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) D. Acquisition Strategy											
The project will begin with Key Decision Point (KDP) A declaration in early FY04. Concept Definition Activities will continue through FY05, and culminate in a FY06 KDP B (pre-Acquisition) decision. Subsequent FY06 pre-Acquisition contracts immediately follow. Acquisition and operations (KDP C) will commence in FY07 with a planned first launch in FY12.											
(U) E. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>		
				1	2	3	4	1	2	3	4
(U) KDP A									X		
(U) Begin Concept Definition										X	
Project A009											
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Exhibit R-2A (PE 0305910F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT A009			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Concept definition Studies (Phase A)									3,684	
(U)	Program Office Support									245	
(U)	Total									3,929	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Multiple Contractors	TBD	TBD	TBD	TBD	0	0	0	3,684	Continuing	TBD
<u>Support and Management Organizations</u>											
	Program Office	N/A	N/A	N/A	TBD	0	0	0	245	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
None											
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
None											
<u>Support and Management Property</u>											
None											
<u>Test and Evaluation Property</u>											
None											
Project A009					Page 30 of 31 Pages			Exhibit R-3 (PE 0305910F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0305910F SPACETRACK		A009	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	3,684	TBD	TBD
Subtotal Support and Management	0	0	0	245	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	3,929	TBD	TBD

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305911F Defense Support Program

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	5,890	2,024	0	0	0	0	0	0	0	1,927,968
3615 Shield/Alert	3,824	0	0	0	0	0	0	0	0	71,029
3624 Defense Support Program	2,066	2,024	0	0	0	0	0	0	0	1,856,939
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY2003, Project number 3615, SHIELD/Alert effort transferred to Space Based Infrared System (SBIRS) Engineering and Manufacturing Development, PE 0604441F. Project 3624, Defense Support Program, was completed.

(U) A. Mission Description

The Defense Support Program (DSP) is a system of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide strategic and tactical warning and limited attack assessment of a ballistic missile attack. Shield/ALERT (Attack and Launch Early Reporting to Theater) was a ground station mission processing capability which exploits inherent satellite capability to provide theater missile warning and cueing.

(U) B. Budget Activity Justification

DSP is an operational system and is funded in Budget Activity 7, Operational Systems Support because it supports integrating DSP to the new Evolved Expendable Launch Vehicle (EELV) and related support activities.

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	6,142	2,090	0	1,928,286
(U) Appropriated Value	6,363	2,090		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-249	-57		
b. Small Business Innovative Research	-224			
c. Omnibus or Other Above Threshold Reprogram		-9		

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BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development

0305911F Defense Support Program

(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR				-318
(U) Current Budget Submit/FY 2004 PBR	5,890	2,024	0	1,927,968
(U) <u>Significant Program Changes:</u>				
(U) FY03: SHIELD effort transferred to the Space Based Infrared System (SBIRS) High program.				
(U) FY03: DSP project was completed.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305911F Defense Support Program					PROJECT 3615
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3615 Shield/Alert	3,824	0	0	0	0	0	0	0	0	71,029
<p>(U) <u>A. Mission Description</u> Beginning in 1993, the Talon Shield project developed changes to preexisting DSP processing techniques to provide a Theater Missile Defense capability. These changes provided for the timely and accurate detection, description, and tracking of Tactical Ballistic Missiles and other theater threats, and served as the basis for the activation, on 10 March 1995, of full-time ALERT System operations by the newly constituted 11th Space Warning Squadron. ALERT-generated messages were distributed to theater warfighters; they enhanced attack operations/counterforce operations by providing accurate, timely launch point estimates and supported active and passive defense by providing cueing data to shooters and warning data to theater assets in the form of impact point predictions. Shield continued to serve as a key resource in the evolution of operational improvements to the ALERT System, demonstrating the value of candidate enhancements on a prototype basis in the live, real-time environment. In FY03, effort transferred to Space Based Infrared System, PE 0604441F.</p> <p>Budget Activity Justification: DSP is an operational system and is funded in Budget Activity 7, Operational Systems Support.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$2,807 Continued engineering prototypes and feasibility analysis. Continued SBIRS ground consolidation developmental test and evaluation. (U) \$1,017 Performed technical analysis and independent verification and validation of contractor. (U) \$3,824 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No activity, effort transferred to Space Based Infrared Systems (U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p>										
Project 3615			Page 3 of 10 Pages				Exhibit R-2A (PE 0305911F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program	PROJECT 3615
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(U) B. Project Change Summary

(FY03) SHIELD project funds transferred to SBIRS High PE 0604441F as part of the DSP to SBIRS ground consolidation.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Missile Procurement (PE 0305911F, BA-05, P-25)	97,609	113,517	113,067	29,406	31,920	37,312	33,372	34,159	0	5,156,355
(U) Related RDT&E:										
(U) PE 0604441F- SBIRS High EMD (RDT&E, BA-05, R-67)	524,459	775,395	617,229	508,919	375,645	311,900	381,936	342,046	292,104	5,947,482

(U) D. Acquisition Strategy

The Shield/ALERT Development effort is contracted with Northrop Grumman Electronic Systems Division, Azusa, CA. Initially awarded as part of the Centralized Tactical Processing Program (CTPP) contract in FY93, the effort was moved to the DSP Sensor Post Production Contract in late FY99. The original award was a five-year contract ending in FY00. Authorization to extend the existing effort through FY03 was granted by SAF/AQ and a contract modification at the end of FY00 added the FY01 effort (with provision to add FY02 and FY03 at a later date).

(U) E. Schedule Profile

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ALERT Version 14.1.9	*											
(U) ALERT Version 14.1.10					*							
(U) Transition to SBIRS						*						

* - Completed Event
X - Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305911F Defense Support Program			3615		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Software Development					1,200		0		0
(U)	Program Management Support					384		0		0
(U)	Developmental Test and Evaluation					1,223		0		0
(U)	Federally Funded Research and Development Contractor (FFRDC)					1,017		0		0
(U)	Total					3,824		0		0
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	Aerojet	CPAF	Aug 92	7,898	7,898	7,898			0	7,898
	SPARTA	CPAF	Aug 94	487	487	487			0	487
	Lincoln Lab	PO	Mar 95	288	288	288			0	288
	Aerojet (FO)	CPAF	Oct 96	40,185	40,185	37,471	2,807	0	0	40,278
	Nichols Research Corporation			2,378	2,378	2,378			0	2,378
<u>Support and Management Organizations</u>										
	Program Office Support			N/A	N/A	67			0	67
	FFRDC			N/A	N/A	11,627	1,017	0	0	12,644
	Dept Air Force			N/A	N/A	6,989			0	6,989
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0305911F Defense Support Program			3615	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	48,522	2,807	0	0	0
	Subtotal Support and Management	18,683	1,017	0	0	0
	Subtotal Test and Evaluation					
	Total Project	67,205	3,824	0	0	0
						71,029

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program					PROJECT 3624	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3624 Defense Support Program	2,066	2,024	0	0	0	0	0	0	0	1,856,939
<p>In FY2003, project 3624, Defense Support Program was completed.</p> <p>(U) <u>A. Mission Description</u> The Defense Support Program (DSP) system provides a space-based surveillance system to detect and report missile and space launches and nuclear detonations in near real time during pre-, trans-, and post-attack periods. The DSP system consists of a constellation of satellites in geostationary orbits, fixed and mobile ground processing stations, one multi-purpose facility, and a ground communications network. DSP's primary mission is to provide strategic and tactical warning and limited attack assessment of a ballistic missile attack. DSP also detects and reports nuclear detonation events and provides information for theater warning and exploitation. This project funds the DSP-to-SBIRS transition activities and EELV mission unique engineering integration. The FY03 program funds mission unique engineering efforts to integrate DSP-23 on EELV.</p> <p>Budget Activity Justification: DSP is an operational system and is funded in Budget activity 7, Operational systems Support because it supports integrating DSP to the new Evolved Expendable Launch Vehicle (EELV) and related support activities.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$2,066 Continued integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV). (U) \$2,066 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$2,024 Complete integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV). (U) \$2,024 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity. (U) \$0 Total</p>										
Project 3624			Page 7 of 10 Pages				Exhibit R-2A (PE 0305911F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305911F Defense Support Program	PROJECT 3624
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(U) **B. Project Change Summary**

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Missile Procurement (PE 0305911F, BA-05, P-28)	97,609	113,517	113,067	29,406	31,920	37,312	33,372	34,159	0	5,156,355
(U) Related RDT&E:										
(U) PE 0604441F - SBIRS High EMD	524,459	775,395	617,229	508,919	375,645	311,900	381,936	342,046	292,104	5,947,482

(U) **D. Acquisition Strategy**

DSP has finished the production of satellites through DSP 23. Current contract efforts include support for Flight 22 and 23 launch and sustainment for post production storage testing, launch preparation, and on orbit testing. These efforts were added to the existing DSP Spacecraft and Sensor Post Production Support contracts. The Space Based Infrared Systems (SBIRS) satellites will be the follow-on system to DSP.

(U) **E. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DSP 22 Launch									X			
(U) DSP 23 Launch (FY05)												
* - Completed Event												
X - Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program			PROJECT 3624			
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	DSP 23 Integration on EELV-Heavy					2,066		2,024		0
(U)	Total					2,066		2,024		0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Previous DSP Contracts (1960's-1980's)	Various	Various	N/A	N/A	1,536,317				0	1,536,317
Boeing	FFP	Jul 00	7,252	7,252	3,162	2,066	2,024	0	0	7,252
Aerojet*	C/CPAF	Oct 93	25,719	25,719	25,719				0	25,719
Aerojet	C/CPAF	Sep 93	9,025	9,025	9,025				0	9,025
Aerojet	C/CPFF		25,743	25,743	25,743				0	25,743
Aerojet	C/CPAF	Oct 96	2,578	2,578	2,578				0	2,578
Loral	C/FPI/AF/CPF		37,732	37,732	37,732				0	37,732
DOE	P.O.		10,724	10,724	10,724				0	10,724
Loral	C/CPAF		22,975	22,975	22,975				0	22,975
* EAC is also funded by other appropriations.										
<u>Support and Management Organizations</u>										
Various	MIPRs	As needed			9,706				0	9,706
Aerojet	C/ CPFF		1,305	1,305	1,305				0	1,305
Aerojet/									0	0
Consolidated	C/ FFP	Oct 96	4,724	4,724	4,724				0	4,724
FFRDC	MORD		N/A	N/A	42,109				0	42,109
Other Gov't Cost			N/A	N/A	35,036				0	35,036

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0305911F Defense Support Program			3624			
(U) Performing Organizations Continued:										
* EAC is also funded by other appropriations.										
<u>Support and Management Organizations</u>										
TRW	C/CPFF		9,872	9,872	9,872		0	9,872		
TRW Consolidated	C/CPAF	Oct 96	292	292	292		0	292		
PRC	C/FPIF	Apr 94	7,579	7,579	7,579		0	7,579		
SPARTA	C/CPAF	Aug 94	150	150	150		0	150		
<u>Test and Evaluation Organizations</u>										
Program Office Support	Various	As needed	N/A	N/A	68,101		0	68,101		
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	
<u>Subtotals</u>									<u>Total</u>	
Subtotal Product Development					1,673,975	2,066	2,024	0	0	1,678,065
Subtotal Support and Management					110,773				0	110,773
Subtotal Test and Evaluation					68,101				0	68,101
Total Project					1,852,849	2,066	2,024	0	0	1,856,939

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305913F NUDET Detection System (Space)					PROJECT 2808		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2808	Nuc Detonation Det Sys (sensors)	21,420	20,865	35,834	35,491	32,696	28,069	28,952	35,036	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u></p> <p>The Nuclear Detonation (NUDET) Detection System (NDS) provides a worldwide, highly survivable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space in near-real time. The NDS supports NUDET detection requirements for USSPACECOM (Integrated Tactical Warning and Attack Assessment (ITW/AA)), USSTRATCOM (Nuclear Force Management), and AFTAC (Treaty Monitoring). NDS consists of space and ground segments. The space segment consists of NUDET detection sensors (optical, x-ray, dosimeters and EMP) on Global Positioning System (GPS) satellites, and Defense Support Program (DSP) satellites (neutrons and gamma rays). The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).</p> <p>This NDS program element funds Research and Development of ICADS, GNT, and NDS analysis payload (NAP). ICADS provides a fixed ground receiving station. GNT provides a survivable ground receiving station. NAP improves existing NDS capability and will be integrated onto GPS Block IIR satellites 13-21. The NDS community, as a result of the NDS National Review, moved funding for the EMP sensor research and production to DOE and integration funding for the first 12 Block IIF satellites to GPS Space and Control (PE 0305165F), with ground segment development remaining in the NDS PE.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$16,045 Continued ICADS and GNT development</p> <p>(U) \$1,244 Continued NDS sensor on-orbit qualification</p> <p>(U) \$843 Continued Mission Support and system studies</p> <p>(U) \$3,288 Continued Technical Support</p> <p>(U) \$21,420 Total</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
07 - Operational System Development	0305913F NUDET Detection System (Space)	2808		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$0	Accomplishments/Planned Program			
(U) \$15,183	Continue ICADS and GNT development			
(U) \$1,189	Continue NDS sensor on-orbit qualification			
(U) \$1,100	Continue Mission Support and system studies			
(U) \$3,393	Continue Technical Support			
(U) \$20,865	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>				
(U) \$0	Accomplishments/Planned Program			
(U) \$27,698	Continue ICADS and GNT development			
(U) \$2,604	Continue NDS sensor on-orbit qualification			
(U) \$1,860	Continue Mission Support and system studies			
(U) \$3,672	Continue Technical support			
(U) \$35,834	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is in Budget Activity 7 - Operational System Development because it is a post-Milestone III program.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	21,525	21,180	25,944	TBD
(U) Appropriated Value	21,823	21,180		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-403	-224		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-91		
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR			9,890	
Project 2808				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0305913F NUDET Detection System (Space)				2808			
(U) C. Program Change Summary (\$ in Thousands) Continued											
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>		
(U)	Current Budget Submit/FY 2004 PBR				21,420	20,865	35,834		TBD		
(U)	<u>Significant Program Changes:</u> FY04 adjustments include; \$3,580K to add DSP to NDS Ground processing; \$6,310K increase for ICADS IIF software development.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>		
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Operations & Maintenance, (PE 0305913F, BA 1, Operating Forces	8,674	8,666	8,123	8,842	9,722	10,550	10,461	10,578	Continuing	TBD
(U)	Missile Procurement, (PE 0305913F, BA 5 - Space and Other Support, P-21)	18,211	0	0	0	0	0	0	0		18,933
(U)	Other Procurement, (PE 0305913F, BA 3 - Electronics and Telecom Equipment, P-63)	8,372	7,860	10,786	7,594	9,359	12,299	15,328	26,367	Continuing	TBD
(U)	Related RDT&E:										
(U)	PE 0305165F, NAVSTAR GPS (Space/Ground Segment)										
(U)	PE 0305911F, Defense Support Program										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305913F NUDET Detection System (Space)	PROJECT 2808
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(U) E. Acquisition Strategy

The NDS Acquisition Strategy is to develop and procure components to sustain the U. S. NDS capability for the GPS Block IIR, IIF, and future generation satellites. Funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DoE) to Sandia and Los Alamos National Laboratories on existing DOE contracts.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GPS IIR O&M (S/W Modifications)			*		*		X		X		X	
(U) ICADS Operational Strings move to SBIRS Facility		*			*		X		X		X	
(U) GPS IIF Use Case Model Review		*	*		*		X		X		X	
(U) GPS IIF System Specification Review		*					X					
(U) GPS IIF Phase Review	*		*		*		X		X		X	

* = Completed Event; X = Planned Event

System Specification Review moved from FY03 2nd Qtr to 3rd Qtr -- User coordination will take 1 extra month

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305913F NUDET Detection System (Space)			PROJECT 2808		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	ICADS and GNT development					16,045		15,183		27,698
(U)	NDS sensor on-orbit qualification					1,244		1,189		2,604
(U)	Mission support requirements and system studies					843		1,100		1,860
(U)	Technical support					3,288		3,393		3,672
(U)	Total					21,420		20,865		35,834
(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 Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Sandia National Labs	MIPR	Oct 94			52,774	15,898	15,018	27,496	Continuing	TBD
GNT: Intermetrics	CPFF	Dec 93	1,262	1,262	1,262	0	0	0	0	1,262
SAIC (Intg/Grd Supt)	Time/Matls	Dec 95			4,787	0	0	0	0	4,787
Combined GOSC/NAP:	FFP	Oct 97	3,633	3,633	6,166	0	0	0	0	6,166
Lockheed Martin										
SAIC	Time/Matl	Dec 97	432	432	432	0	0	0	0	432
W-Sensor: SRI (Stanford Rsch Inst.)	CPFF	Aug 94	415	415	415	0	0	0	0	415
Los Alamos Natl Lab	MIPR	Jan 96			5,386	1,244	1,189	2,604	Continuing	TBD
<u>Support and Management Organizations</u>										
Mission Support	Multiple	N/A			3,979	843	1,100	1,860	Continuing	TBD
Prog Contractual Spt.	Multiple	Various	1,534	1,534	5,185	0	0	0	0	5,185
Technical Support	Multiple	Various	N/A	N/A	1,144	3,288	3,393	3,672	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
17th TS, Schriever AFB CO			9	9	9	147	165	202	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE February 2003

BUDGET ACTIVITY 07 - Operational System Development PE NUMBER AND TITLE 0305913F NUDET Detection System (Space) PROJECT 2808

(U) Government Furnished Property:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				71,222	17,142	16,207	30,100	TBD	TBD
Subtotal Support and Management				10,308	4,131	4,493	5,532	TBD	TBD
Subtotal Test and Evaluation				9	147	165	202	TBD	TBD
Total Project				81,539	21,420	20,865	35,834	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305917F Space Architect					PROJECT 4746		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4746	National Security Space Architect	0	0	12,589	12,941	12,843	13,065	13,834	13,890	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note 1: In FY2004, Project #4746, National Security Space Architect, efforts were transferred from PE 0305917D8Z, National Security Space Architect.

(U) **A. Mission Description**
 The National Security Space Architect (NSSA) is an independent joint Department of Defense (DoD) and Intelligence Community (IC) organization chartered by Memorandum of Agreement between the Secretary of Defense and the Director of Central Intelligence. The NSSA is responsible for developing and integrating future space architectures and capabilities for the mid- and long-term across the entire range of national security (DoD, IC, and civil agencies) space and space-related missions in response to validated and emerging needs, and expanding technology opportunities. Specifically, the NSSA develops architectures and strategic plans across the national security space enterprise in a collaborative manner with representatives of all affected organizations, spanning the missions and functions of military, intelligence, civil and commercial space sectors. In January 2001, the Commission to Assess United States National Security Space Management and Organization (the Space Commission) endorsed the NSSA and recommended expanding its roles and responsibilities. As a result, the NSSA was realigned to report to the Under Secretary of the Air Force and the Director of the National Reconnaissance Office (USecAF/DNRO). NSSA's expanded roles and responsibilities include conducting an annual assessment of the consistency of defense and intelligence space programs with national security space policy, planning guidance, and architectural decisions; supporting development of the National Security Space Plan by the USecAF/DNRO; and assisting the USecAF/DNRO with assessments of trades between space and non-space solutions to meet user requirements, as well as appropriate integration of space with land, sea, and air components. There is no other organization in the DoD, the IC, or the civil sector that performs these functions. The NSSA obtains direct support from various space planning and development organizations across the federal government and industry for space architecture planning and development. Funding in this document incorporates DoD requirements only and represents approximately seventy percent of the total funding required. Intelligence Community requirements and funding to support the NSSA efforts are not included in this program element.

(U) **FY 2002 (\$ in Thousands)**
 (U) \$0 The DoD portion of NSSA funding was contained in PE 0605116D8Z, Support to C3I, in FY 2002.
 (U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$0 The DoD portion of NSSA funding was contained in PE 0305917D8Z, National Security Space Architect
 (U) \$0 Total

Project 4746 Page 1 of 5 Pages Exhibit R-2 (PE 0305917F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																								
BUDGET ACTIVITY 07 - Operational System Development		PE NUMBER AND TITLE 0305917F Space Architect	PROJECT 4746																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$8,057 Architectural Development Effort or Study to include such topics as: Responsive Space Operations; Space Protection; Objective Blue Force Tracking; Integrated Force Application; and Space Control and Information Operations</p> <p>(U) \$500 National Security Space (NSS) Plan Development</p> <p>(U) \$3,032 NSS Program Assessment</p> <p>(U) \$1,000 Architecture Transition Planning and Implementation Support</p> <p>(U) \$12,589 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 7 because the architecture studies affect the design and acquisition of operational systems.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">12,589</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td></td> <td></td> <td style="text-align: right;">12,589</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> In FY2004, Project #4746, National Security Space Architect, efforts were transferred from PE 0305917D8Z, National Security Space Architect.</p>					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	0	0	TBD	(U) Appropriated Value					(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR			12,589		(U) Current Budget Submit/FY 2004 PBR			12,589	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																						
(U) Previous President's Budget	0	0	0	TBD																																																						
(U) Appropriated Value																																																										
(U) Adjustments to Appropriated Value																																																										
a. Congressional/General Reductions																																																										
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d. Below Threshold Reprogram																																																										
e. Rescissions																																																										
(U) Adjustments to Budget Years Since FY 2003 PBR			12,589																																																							
(U) Current Budget Submit/FY 2004 PBR			12,589	TBD																																																						
Project 4746		Page 2 of 5 Pages																																																								
		Exhibit R-2 (PE 0305917F)																																																								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305917F Space Architect			PROJECT 4746			
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Intelligence Community*										
*Available in the Intelligence Community budget.										
(U) E. Acquisition Strategy										
RDT&E funds will be used to obtain direct and infrastructure support from various space planning and development organizations across the DoD and industry, including Federally Funded Research & Development Centers (FFRDCs) and contracted System Engineering and Technical Assistance in direct support of DoD space architecture planning and development. Funds will be applied to existing contract vehicles.										
(U) F. Schedule Profile										
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>	
			1	2	3	4	1	2	3	4
(U)	Compl support to Integrated Intell, Surveil & Recon Arch Dev Effort								X	
(U)	Compl support to Space Situational Awareness Architecture Dev Effort								X	
(U)	Initiate Architectural Development Study								X	
(U)	Compl FY 05 NSS Program Assessment								X	
(U)	Initiate FY 06 NSS Program Assessment									X
(U)	Incorporate the integrated space technology roadmap into the NSS Plan								X	
	X = Planned Event									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0305917F Space Architect			4746		
(U) A. Project Cost Breakdown (\$ in Thousands)					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U) Architectural Development Effort or Study									8,057	
(U) National Security Space (NSS) Plan Development									500	
(U) NSS Program Assessment									3,032	
(U) Architecture Transition Planning and Implementation Support									1,000	
(U) Total									12,589	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Science Applications International Corp; Computer Science Corp; SPARTA, Inc; Effort AEGIS Research Corp; Aerospace Corp; MITRE	FFRDC & SETA Level of	Various	Continuing	Continuing				12,589	Continuing	TBD
<u>Product Development Organizations</u>					None					
<u>Support and Management Organizations</u>					None					
<u>Test and Evaluation Organizations</u>					None					
(U) Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Project 4746										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305917F Space Architect			PROJECT 4746		
(U) Government Furnished Property Continued:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Space Architect							12,589	TBD	TBD
Subtotal Product Development									
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project							12,589	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					PROJECT 5052			
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5052	JTC/SIL MUSE		0	1,953	0	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

In FY04, Project 675052, Joint Technology Center/Systems Integration Laboratory (JTC/SIL) efforts are reflected in the Joint Military Intelligence Program/Defense Air Reconnaissance Program PE.

(U) A. Mission Description

The Joint Technology Center/System Integration Laboratory Multiple UAV Simulation Environment (JTC/SIL MUSE) provides and develops simulations of UAVs, their tactical and strategic reconnaissance uses and how their imagery products are used in the DoD reconnaissance system. These simulations are applied for the development of the Army's tactical UAV (TUAV), the Navy's vertical takeoff UAV (VTUAV), Air Force's Predator medium altitude endurance UAV (EUAV) and the Air Force's Global Hawk high altitude EUAV.

(U) FY 2002 (\$ in Thousands)

- (U)** \$0 Accomplishments/Planned Program
- (U)** \$0 No Activity
- (U)** \$0 Total

(U) FY 2003 (\$ in Thousands)

- (U)** \$0 Accomplishments/Planned Program
- (U)** \$1,953 JTC/SIL MUSE
- (U)** \$1,953 Total

(U) FY 2004 (\$ in Thousands)

- (U)** \$0 Accomplishments/Planned Program
- (U)** \$0 No Activity
- (U)** \$0 Total

(U) B. Budget Activity Justification

This program is in BA 7 to support the development activity of JTC/SIL MUSE.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0308601F Modeling and Simulation Support					5052	
(U) C. Program Change Summary (\$ in Thousands)											
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		<u>Total Cost</u>
(U)	Previous President's Budget				0		1,995		0		TBD
(U)	Appropriated Value						1,995				
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions						-42				
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram										
	e. Rescissions										
(U)	Adjustments to Budget Years Since FY 2003 PBR										
(U)	Current Budget Submit/FY 2004 PBR						1,953		0		TBD
(U)	<u>Significant Program Changes:</u>										
	Not applicable.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									Continuing	Continuing
(U)	Other APPN										
(U) E. Acquisition Strategy											
	All major contracts for JTC/SIL MUSE will be awarded after full and open competition.										
(U) F. Schedule Profile											
					<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
					1	2	3	4	1	2	3
(U)	AFSERS Modeling/System Simulations Interfaces							X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development										PROJECT
0308601F Modeling and Simulation Support										5052
(U) A. Project Cost Breakdown (\$ in Thousands)										
							<u>FY 2002</u>	<u>FY 2003</u>		<u>FY 2004</u>
(U)	JTC/SIL MUSE						0	1,953		0
(U)	Total						0	1,953		0
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
JTC/SIL MUSE	MIPR	2QFY03					1,953	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development							1,953	0	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project							1,953	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308699F Shared Early Warning System						PROJECT 4838	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4838	Shared Early Warning System	3,421	3,942	3,254	3,354	3,385	3,430	3,478	3,526	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Shared Early Warning System (SEWS) resulted from Presidential foreign policy initiatives beginning in 1996. Arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. These efforts were initially handled on an ad hoc basis through the Office of the Secretary of Defense, the Joint Staff, and the National Reconnaissance Office (NRO). Regional U.S. Theater Combatant Commanders and other policy makers strongly support these efforts based on political and operational benefits. SEWS was established in December 1998 as a formal DoD program with the Air Force as the lead service. It is centrally managed to eliminate the previous ad hoc approach. SEWS is comprised of: program management by the System Program Office (including the use of Federally Funded Research & Development Centers (FFRDC) and Systems Engineering and Technical Assistance contractors); design, development, and acquisition of a common SEWS architecture; design, development, test, and installation of a Joint Data Exchange Center (JDEC) in Moscow, Russia; development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information; and site preparation/installation for additional systems, as required.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Program
- (U) \$2,420** Continued to develop and evolve a common SEWS architecture
- (U) \$748** Continued design and test of a JDEC and Pre-Launch Notification System in Moscow
- (U) \$253** Installed SEWS at additional sites
- (U) \$3,421** Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Program
- (U) \$2,697** Continue design, test and installation of a JDEC system and Pre-Launch Notification System in Moscow. Initial design completed. Awaiting green light from US/RF negotiations to proceed toward final design and installation.
- (U) \$1,245** Continue to develop and evolve a common SEWS architecture
- (U) \$3,942** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																															
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0308699F Shared Early Warning System	PROJECT 4838																																																															
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$1,294</td> <td>Complete design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow</td> </tr> <tr> <td>(U) \$1,960</td> <td>Continue to develop and evolve a common SEWS architecture</td> </tr> <tr> <td>(U) \$3,254</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in Budget Activity 7 - Operational System Development, because it supports work on currently operating systems and/or upgrades still in engineering development</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">3,660</td> <td style="text-align: center;">4,027</td> <td style="text-align: center;">3,319</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">3,697</td> <td style="text-align: center;">4,027</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-37</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-40</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: center;">-239</td> <td style="text-align: center;">-45</td> <td style="text-align: center;">-65</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">3,421</td> <td style="text-align: center;">3,942</td> <td style="text-align: center;">3,254</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>The FY02 JDEC/PLNS schedule has been delayed into FY03. Negotiations between US/RF regarding taxes and liabilities and potential mission expansion issues has not been resolved. The Program Office feels it is not prudent to expend additional funding for development and testing without resolving this impasse. FY02 funding previously earmarked for JDEC/PLNS requirements has been used to accelerate efforts to develop and evolve a common SEWS architecture. This acceleration put SEWS in a better position to respond rapidly to mission requirement changes based on evolving real world situations.. This shift also postures the Program Office to respond to JDEC/PLNS requirements with FY03 funds should negotiations provide a 'green light' to move forward.</p>			(U) \$0	Accomplishments/Planned Program	(U) \$1,294	Complete design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow	(U) \$1,960	Continue to develop and evolve a common SEWS architecture	(U) \$3,254	Total		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	3,660	4,027	3,319	TBD	(U) Appropriated Value	3,697	4,027			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-37				b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram		-40			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR	-239	-45	-65		(U) Current Budget Submit/FY 2004 PBR	3,421	3,942	3,254	TBD
(U) \$0	Accomplishments/Planned Program																																																																
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Project 4838	Page 2 of 5 Pages	Exhibit R-2 (PE 0308699F)																																																															

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0308699F Shared Early Warning System	PROJECT 4838
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(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) OPAF (PE 0308699F, Comm Elect Mods, P-1 Line Item #75, BA 3)	897	1,673	193	288	1,522	285	291	296	Continuing	TBD

(U) **E. Acquisition Strategy**

The Integrated Space Command and Control (ISC2) contract is employed as an evolutionary spiral development acquisition strategy that enables development and fielding of an initial capability in response to validated requirements. Spiral development also adds flexibility to adapt to changes in requirements, technologies, etc that come with the use of a spiral approach. SEWS uses commercial off-the-shelf (COTS) items and employs a data system already in use by DoD. Implementation within the ISC2 contract offers benefits to SEWS by taking advantage of the commonality between SEWS and the missile warning mission already included as part of ISC2. This synergy encourages the use of a common system support infrastructure and reuse of software components. Failure to adequately fund this effort will preclude the US government from executing Presidential and State department agreements to provide missile event data to foreign partners.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Install JDEC and Pre-Launch Notification System (1)							X			X		
(U) Installed SEWS at additional sites			*									
(U) Incremental development of common system architecture	*		*		*		X		X		X	
(U) Standardization of additional sites with developed architecture				*		X						

* indicates task completed/X indicates scheduled task

(1) JDEC and Pre-Launch Notification System start of installation delayed from 3rd quarter FY02 to 3rd quarter FY03 pending US-Russian agreement on taxes, liabilities, and customs issues

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0308699F Shared Early Warning System			4838		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Various Contracts					1,679		794		1,218
(U)	JDEC/PLNS					748		2,328		1,294
(U)	Install Additional Sites					253		0		0
(U)	System Engineering					558		538		597
(U)	Travel and Infrastructure					183		282		145
(U)	Total					3,421		3,942		3,254
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin	CP/AF	Sep 00	TBD	TBD	5,194	1,821	2,034	1,844	Continuing	TBD
SPAWAR	MIPR	Nov 99	631	631	631	0	0	0	0	631
NRO	MIPR	Dec 99	TBD	TBD	4,162	0	0	0	0	4,162
Navy	MIPR	Nov 02	TBD	TBD	0	0	201	205	Continuing	TBD
DTRA	MIPR	Oct 01	TBD	TBD	187	0	369	0	Continuing	TBD
Various Ctrs/Gov Agencies	MIPR/AF	Nov 99	TBD	TBD	2,452	392	222	155	Continuing	TBD
<u>Support and Management Organizations</u>										
FFRDC	CPFF	Jan 00	TBD	TBD	1,766	255	225	273	Continuing	TBD
A&AS	C/R	Apr 00	TBD	TBD	2,528	770	542	561	Continuing	TBD
PMA	N/A	Jan 00	TBD	TBD	965	183	282	145	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFSPC 17th Test Squadron	AF	Sep 00	TBD	TBD	328	0	67	71	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308699F Shared Early Warning System			PROJECT 4838	
(U) Government Furnished Property:								
	<u>Contract</u>							
	<u>Method/Type</u>	<u>Award or</u>						
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development				12,626	2,213	2,826	2,204	TBD
Subtotal Support and Management				5,259	1,208	1,049	979	TBD
Subtotal Test and Evaluation				328	0	67	71	TBD
Total Project				18,213	3,421	3,942	3,254	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS					PROJECT 4885	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4885	Avionics Modernization Program (AMP)	50,523	155,102	105,381	150,636	179,562	142,235	108,623	41,466	38,127	936,126
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2003, Project 674726, Avionics Modernization Program (AMP), was changed to Project 674885 (same name) to correct an administrative error. This action did not change program content nor its funding.

(U) **A. Mission Description**

The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated DOD Navigation/Safety mods, the Global Air Traffic Management (GATM) systems and the C-130 Broad Area Review requirements on the AF's 490 C/AC/EC/HC/LC/MC-130s that are not being replaced with new C/CC/EC/WC-130Js. These mandated mods are incorporated with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include: ETCAS, TAWS, replacement of APN-59 & APQ-175 radars, N-1/C-12 compass, dual autopilots, dual flight management systems and HF/UHF/VHF datalink to constitute C-130 AMP. AMP will allow the AF's 490 C/AC/EC/HC/LC/MC-130s complete access to the GATM-controlled international air space. Also, AMP and USSOCOM's Common Architecture for Penetration (CAAP) have been combined to eliminate any duplication of effort in these avionics programs. .

The USAF's C-130 fleet consists of 15 different mission design series (MDS) to be modified by the AMP. Within each of these MDSs are multiple variants (C-130H2, etc.) to be modified by AMP. These multiple different models and cockpit configurations create significant logistics support and aircrew training inefficiencies. Also, these differences greatly complicate aircrew and aircraft interoperability at forward operating locations. C-130 AMP standardizes the cockpit configurations and avionics for these different variants into a single cockpit configuration by installing a core avionics package, thus eliminating many of these significant logistics, interoperability and training problems. (Note: The new C/CC/EC/WC-130J aircraft are not included in this C-130 AMP program).

Shown here are RDT&E funds for C-130 AMP. SOCOM's AC/EC/MC-130s will have additional CAAP equipment installed along with AMP. This unique equipment is funded in MFP-11, and these funds are not shown here.

The Boeing Company was awarded the AMP contract on 30 July 01. Each C-130 variant or group of variants will require a specific kit development and test. Then, each will proceed through development and production serially. This waterfall approach will result in an orderly development and production sequencing for the 15 different C-130 MDSs.

At the AF's request, Boeing will conduct a Training System Requirements Analysis (TSRA), beginning in FY02. From this TSRA, an AF-fleetwide training system will be developed for the AMP/CAAP-modified fleet. This will include upgrading all AC/C/EC/HC/LC/MC-130 Weapons Systems Trainers (WSTs) to incorporate the AMP/CAAP modifications.

Development activities will initially focus on two areas: AMP's architecture and kit development for the first Combat Delivery aircraft (C-130H2) and the first Special Mission aircraft (MC-130H), as well as software development of the SOF AMP and Common Avionics Architecture for Penetration (CAAP) capabilities.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0401115F C-130 AIRLIFT SQUADRONS	4885
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$33,911	Contract awarded to Boeing, Long Beach on 30 Jul 01. They began staffing the program almost immediately and continued this process thru FY02. Currently, their work force has stabilized at approximately 354 personnel, working the systems and software development for first two AMP core kits. The Core Systems Requirements Review (SRR) and the Core Software Specification Review (SSR) are complete. Design and software development continues for the Group A & B equipment (Group A is acft wiring, racks, install points etc. Group B is the actual avionics boxes) for the crew station modules. Also, ongoing is the design of system integration lab (SIL), development of AMP training system, and continue CAAP Risk Mitigation testing.	
(U) \$6,309	Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee	
(U) \$1,260	Developmental Test and Evaluation	
(U) \$9,043	Program office support (TDY, training and supplies).	
(U) \$50,523	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$123,539	Ramp-up and design specification will be substantially completed in FY03, allowing software coding to proceed at full speed and developmental hardware acquisition to begin. Detailed design work will continue for both Group A and B equipment for the 13 follow-on C-130 MDSs. Development of the training systems will begin 4th Qtr FY03, following completion of the Training Systems Requirements Analysis. New efforts for FY03 will include the acquisition of avionics hardware to support the software integration efforts associated with both the Core Operational Flight Program (OFP) and the Combat Talon OFP. After completion of the software design is documented by the CDR for the C-130 core and SOF AMP variants, coding and unit testing for the software integration facility will begin. Software and avionics account for approximately 50% of the FY03 budget.	
(U) \$14,633	Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee	
(U) \$4,700	Developmental Test and Evaluation	
(U) \$5,370	Training System development upgrades	
(U) \$6,860	Program office support (TDY, training and supplies).	
(U) \$155,102	Total	
Project 4885	Page 2 of 5 Pages	Exhibit R-2 (PE 0401115F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development		0401115F C-130 AIRLIFT SQUADRONS		4885	
(U) A. Mission Description Continued					
(U) FY 2004 (\$ in Thousands)					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$74,357	Continue developmental hardware acquisition. Detailed design work will continue for both Group A and B equipment on the follow-on MDSs. Continue development of the training systems based on the results of the Training Systems Requirements Analysis (TSRA). Continue acquisition of the avionics hardware to support the software integration efforts associated with both the Core Operational Flight Program (OFP) and the Combat Talon OFP. Coding and unit testing for the software integration facility will continue. Efforts will continue for trial installs of the AC-130 and the HC-130 to begin in late FY05/early FY06.			
(U)	\$11,884	Engineering Change Orders (ECOs), Govt Furnished Parts and Information (GFP/GFI) and the award fee.			
(U)	\$7,460	Developmental Test and Evaluation			
(U)	\$5,270	Training System development upgrades			
(U)	\$6,410	Program office support (TDY, training and supplies).			
(U)	\$105,381	Total			
(U) B. Budget Activity Justification					
C-130 Avionics Modernization Program (AMP): This project is in Budget Activity 7, Operational Systems Development as it is a major avionics and cockpit configuration modernization to the AF's C/AC/EC/HC/LC/MC/-130 fleet of aircraft.					
(U) C. Program Change Summary (\$ in Thousands)					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	80,533	158,978	180,534	936,126
(U)	Appropriated Value	60,533	158,978		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-742	-3,876		
	b. Small Business Innovative Research	-1,637			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-7,525			
	e. Rescissions	-106			
(U)	Adjustments to Budget Years Since FY 2003 PBR			-75,153	
(U)	Current Budget Submit/FY 2004 PBR	50,523	155,102	105,381	
Project 4885		Page 3 of 5 Pages	Exhibit R-2 (PE 0401115F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE						
							February 2003						
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT					
07 - Operational System Development				0401115F C-130 AIRLIFT SQUADRONS				4885					
(U) C. Program Change Summary (\$ in Thousands) Continued													
(U) <u>Significant Program Changes:</u>													
(U) D. Other Program Funding Summary (\$ in Thousands)													
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
(U) PE 0401115F, Avionics Modernization Program (AMP), BP1100					117,043	149,086	234,035	419,089	2,266,133	3,185,386			
(U) E. Acquisition Strategy													
The C-130 AMP contract was awarded 30 July 2001. The contract is a Cost-Plus Award Fee contract to develop and install AMP kits for the 490 aircraft within the AF's AC/C/EC/HC/LC/MC-130 fleet. Revisions to the AF training system is an option under the AMP contract, which will modify the various Training Programs and Weapons Systems Trainers to the AMP configuration.													
(U) F. Schedule Profile													
		<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>						
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Core Systems Requirements Review (SRR)		*											
(U) Core Software Specification Review (SSR)				*									
(U) Core Preliminary Design Review (PDR)						X							
(U) C-130 SOF/AMP PDR							X						
(U) AMP Hardware Concept Design Review (CDR)								X					
(U) AMP Software CDR									X				
(U) SOF Hardware CDR										X			
(U) Development Activities (AC-130 & HC-130)							X						
*: Item is complete.													
X : Item is scheduled													
The C-130 AMP contract was awarded on 30 Jul 01.													
Project 4885				Page 4 of 5 Pages				Exhibit R-2 (PE 0401115F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0401115F C-130 AIRLIFT SQUADRONS			4885		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	C-130 AMP System Development & Demonstration (SDD)				30,106		114,669			64,637
(U)	Program Office Support				9,043		6,860			6,410
(U)	GFE						0			2,380
(U)	ECO				6,309		14,633			11,884
(U)	Developmental Test and Eval				1,260		4,700			7,460
(U)	Training System Upgrade						5,370			5,270
(U)	Award Fee				3,805		8,870			7,340
(U)	Total				50,523		155,102			105,381
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing, Long Beach, CA	CPAF	30 Jul 01			38,977	40,220	143,542	91,511	437,261	751,511
Note: Funds shown here contain System Design & Development, ECO, Training System Upgrades and the Award Fee.										
<u>Support and Management Organizations</u>										
Program Support Office	N/A	N/A			7,993	9,043	6,860	6,410	85,006	115,312
<u>Test and Evaluation Organizations</u>										
Various					0	1,260	4,700	7,460	55,883	69,303
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					38,977	40,220	143,542	91,511	437,261	751,511
Subtotal Support and Management					7,993	9,043	6,860	6,410	85,006	115,312
Subtotal Test and Evaluation					0	1,260	4,700	7,460	55,883	69,303
Total Project					46,970	50,523	155,102	105,381	578,150	936,126
Project 4885					Page 5 of 5 Pages			Exhibit R-3 (PE 0401115F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401119F C-5 Airlift Squadrons

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	157,542	284,730	356,570	455,232	312,151	63,937	97	0	0	1,820,171
4495 Avionics Modernization Program	72,052	54,414	66,063	985	0	0	0	0	0	325,096
4835 Reliability Enhancement & Reengining Program	85,490	230,316	290,507	454,247	312,151	63,937	97	0	0	1,495,075
Quantity of RDT&E Articles	0	0	3	0	0	0	0	0	0	0

(U) A. Mission Description

674495: Avionics Modernization Program (AMP): Phase I of an Air Force planned two-phase modernization effort for the C-5. It implements Global Air Traffic Management (GATM) and navigation/safety capability and the All Weather Flight Control System (AWFCS). It installs Deputy Secretary of Defense (DepSecDef) directed navigation/safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of controlled flight into terrain and mid-air collisions. GATM capability, which encompasses communications, navigation, and surveillance requirements will be incorporated into the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress towards free flight capability. The AWFCS portion of AMP replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to mobility command and control capabilities will also be incorporated in the AMP design. The TCAS portion was accelerated ahead of the rest of the AMP mod and was completed 31 Oct 02. Two AMP RDT&E test articles are funded for installation and flight test in FY02/03/04.

674835: Reliability Enhancement and Re-engining Program (RERP): Phase II of an Air Force planned two-phase modernization effort for the C-5. It improves aircraft reliability, maintainability and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability) while reducing total ownership costs (TOC). This effort centers around replacing TF-39 engines with a more reliable, commercially Off-the-Shelf (COTS) turbofan engine with increased takeoff thrust and stage three noise compliance. These new engines (along with new pylons, wing attach fittings and upgrades, and thrust reversers) increase payload capability and access to Global Air Traffic Management (GATM) airspace. It also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed (e.g., auxiliary power units, electrics, hydraulics, fuel system, fire suppression system, pressurization/air conditioning system, landing gear, and airframe) to increase fleet availability and reduce total ownership costs. Three RDT&E test articles are funded for installation and flight test in FY05/06/07.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401119F C-5 Airlift Squadrons

(U) **B. Budget Activity Justification**

674495: Avionics Modernization Program (AMP): This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

674835: Reliability Enhancement and Re-engining Program (RERP): This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	166,508	277,795	293,138	1,787,492
(U) Appropriated Value	156,508	291,095		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,564	-3,078		
b. Small Business Innovative Research	-4,233			
c. Omnibus or Other Above Threshold Reprogram		-3,287		
d. Below Threshold Reprogram	7,600			
e. Rescissions	-769			
(U) Adjustments to Budget Years Since FY 2003 PBR			63,432	32,679
(U) Current Budget Submit/FY 2004 PBR	157,542	284,730	356,570	1,820,171

(U) **Significant Program Changes:**

Since FY03PB:

C-5 AMP

-After the FY02 Appropriation, BTR funding for engineering changes was made to the program (+\$8.0M) and a rescission (-\$0.2M) was made in support of Congressional action.

-After the FY03 Appropriation, Congress made a General Reduction to RDT&E funds (-\$0.6M).

-Adjustments (+\$47M) were made to the FY04 program as a result of program restructure to reduce risk. Additionally, an adjustment for nonpay purchase inflation and budget issues (-\$1.2M) was made in FY04.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
0401119F C-5 Airlift Squadrons

(U) C. Program Change Summary (\$ in Thousands) Continued

(U) Significant Program Changes Continued:

C-5 RERP

- After the FY02 Appropriation, Congress made a General Reduction to RDT&E funds (-\$1.6M), an additional reduction (-\$4.2M) was taken in support of Small Business Innovative Research, a BTR of funds (-\$0.4M) was made, and a rescission (-\$0.6M) was made in support of Congressional action.
- After the FY03 Appropriation, Congress made a General Reduction to RDT&E funds (-\$2.5M) and another adjustment (-\$3.3M) was taken for Inflation Savings.
- Adjustments (+\$23.0M) were made to the FY04 program to match the OSD Cost Analysis Improvement Group (CAIG) estimate. Additionally, an adjustment for nonpay purchase inflation and budget issues (-\$5.4M) was made in FY04.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons					PROJECT 4495	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4495 Avionics Modernization Program	72,052	54,414	66,063	985	0	0	0	0	0	325,096	
<p>(U) <u>A. Mission Description</u> 674495: Avionics Modernization Program (AMP): Phase I of an Air Force planned two-phase modernization effort for the C-5. It implements Global Air Traffic Management (GATM) and navigation/safety capability and the All Weather Flight Control System (AWFCS). It installs Deputy Secretary of Defense (DepSecDef) directed navigation/safety equipment: Terrain Awareness and Warning System (TAWS) and Traffic Alert and Collision Avoidance System (TCAS), reducing the threat of controlled flight into terrain and mid-air collisions. GATM capability, which encompasses communications, navigation, and surveillance requirements will be incorporated into the aircraft to meet current and future International Civil Aviation Organization (ICAO)/Federal Aviation Administration (FAA) requirements and to progress toward free flight capability. The AWFCS portion of AMP replaces low reliability Line Replaceable Units (LRUs) in the automatic flight control system and replaces aging, non-supportable mechanical instruments in the engine and flight systems. Connectivity to mobility command and control capabilities will also be incorporated in the AMP design. The TCAS portion was accelerated ahead of the rest of the AMP mod and was completed 31 Oct 02. Two AMP RDT&E test articles are funded for installation and flight test FY02/03/04. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishment/Planned Program (U) \$12,421 System Engineering/Program Management (U) \$32,191 AMP Kit Design/Development/Contractor Test (U) \$18,950 Prototype Fabrication/Install (U) \$5,976 Mission Support (U) \$2,514 Government Flight Test Cost (U) \$72,052 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishment/Planned Program (U) \$8,116 System Engineering/Program Management (U) \$34,658 AMP Kit Design/Development/Contractor Test (U) \$2,852 Prototype Fabrication/Install (U) \$5,248 Mission Support</p>											
Project 4495			Page 4 of 15 Pages				Exhibit R-2A (PE 0401119F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 040119F C-5 Airlift Squadrons	PROJECT 4495
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands) Continued

(U) \$3,540 Government Flight Test Cost
(U) \$54,414 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishment/Planned Program
(U) \$13,760 System Engineering/Program Management
(U) \$42,087 AMP Kit Design/Development/Contractor Test
(U) \$2,950 Prototype Fabrication/Install
(U) \$4,150 Mission Support
(U) \$3,116 Government Flight Test Cost
(U) \$66,063 Total

(U) **B. Project Change Summary**

Since FY03 PB:

C-5 AMP

-After the FY02 Appropriation, BTR funding for engineering changes was made to the program (+\$8.0M) and a rescission (-\$0.2M) was made in support of Congressional action.

-After the FY03 Appropriation, Congress made a General Reduction to RDT&E funds (-\$0.6M).

-Adjustments (+\$47M) were made to the FY04 program as a result of program restructure to reduce risk. Additionally, an adjustment for nonpay purchase inflation and budget issues (-\$1.2M) was made in FY04.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program,	4,035	52,492	79,887	81,267	34,705				239,500	554,627

Project 4495

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Exhibit R-2A (PE 040119F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons				PROJECT 4495	
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
BP-11										
(U) Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability Enhancement and Re-engining Program, BP-11	0	0	0	0	149,331	443,994	711,577	891,641	6,561,488	8,758,031
(U) D. Acquisition Strategy										
Avionics Modernization Program: Program acquisition strategy establishes a single integrating contractor (Lockheed Martin Aero) to modify and qualify integrated Commercial Off-the-Shelf (COTS) line replaceable units (LRUs) and software to meet C-5 performance and Global Air Traffic Management (GATM) requirements, update existing C-5 engineering and technical data, develop interface control specifications based on performance requirements, prototype the new system, and support ground and flight testing. AMP contract awarded to the Lockheed Martin Aero/Honeywell team on 22 January 1999. \$9.7M in FY99 procurement was added in the FY00 PB to accelerate Traffic Alert and Collision Avoidance System (TCAS) installations ahead of the rest of AMP. TCAS installs completed 31 Oct 02. The AMP modification is planned for the entire C-5 fleet.										
(U) E. Schedule Profile										
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3
(U) Acquisition Strategy Panel (FY97/4)										
(U) Contract Award (FY99/1)										
(U) Preliminary Design Review (PDR) (FY00/3)										
(U) Critical Design Review (CDR) (FY01/3)										
(U) TCAS Kit Installations Start (FY00/2)										
(U) TCAS Kit Installations End (FY03/1)							*			
(U) AMP Prototype Installation Start (FY02/3)					*					
(U) First Flight/Developmental Test Start (FY03/1)							*			
(U) Production Installation Start (FY04/3)										X
(U) Prod Installation Complete (FY07/2)										
Project 4495	Page 6 of 15 Pages					Exhibit R-2A (PE 0401119F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons	PROJECT 4495
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(U) **E. Schedule Profile Continued**

<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
1	2	3	4	1	2	3	4	1	2	3	4

* = completed event
X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0401119F C-5 Airlift Squadrons			4495			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	System Engineering/Program Management					12,421		8,116		13,760	
(U)	AMP Kit Design/Development/Contractor Test					32,191		34,658		42,087	
(U)	Prototype Fabrication/Install					18,950		2,852		2,950	
(U)	Mission Support					5,976		5,248		4,150	
(U)	Government Flight Test Cost					2,514		3,540		3,116	
(U)	Total					72,052		54,414		66,063	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Lockheed Martin Aero	CPAF	Jan 99		288,118	119,313	63,562	45,626	58,797	820	288,118
	<u>Support and Management Organizations</u>										
	WR-ALC/LA				9,924	4,570	1,700	1,874	1,725	55	9,924
	ASC/GRA				16,380	6,195	4,276	3,374	2,425	110	16,380
	<u>Test and Evaluation Organizations</u>										
	418 Test Squadron (Edwards AFB)				10,674	1,504	2,514	3,540	3,116		10,674
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	N/A										
Project 4495					Page 8 of 15 Pages			Exhibit R-3 (PE 0401119F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0401119F C-5 Airlift Squadrons		4495	
(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
N/A						
<u>Test and Evaluation Property</u>						
N/A						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						
Subtotal Product Development		119,313	63,562	45,626	58,797	820
Subtotal Support and Management		10,765	5,976	5,248	4,150	165
Subtotal Test and Evaluation		1,504	2,514	3,540	3,116	10,674
Total Project		131,582	72,052	54,414	66,063	985
						325,096

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons						PROJECT 4835	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4835	Reliability Enhancement & Reengining Program	85,490	230,316	290,507	454,247	312,151	63,937	97	0	0	1,495,075

(U) **A. Mission Description**

674835: Reliability Enhancement and Re-engining Program (RERP): Phase II of an Air Force planned two-phase modernization effort for the C-5. It improves aircraft reliability, maintainability and availability. RERP will enable the C-5 to achieve wartime mission requirements by increasing fleet availability (mission capable rate, departure reliability) while reducing total ownership costs (TOC). This effort centers around replacing TF-39 engines with a more reliable, commercially Off-the-Shelf (COTS) turbofan engines with increased takeoff thrust and stage three noise compliance. These new engines (along with new pylons, wing attach fittings and upgrades, and thrust reversers) increase payload capability and access to Global Air Traffic Management (GATM) airspace. It also decreases aircraft time to climb, increases engine-out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals. Additionally, numerous other system modifications will be performed (e.g., auxiliary power units, electrics, hydraulics, fuel system, fire suppression system, pressurization/air conditioning system, landing gear, and airframe) to increase fleet availability and reduce total ownership costs. Three RDT&E test articles are funded for installation and flight test in FY05/06/07. This project is comprised of low technical risk efforts supporting fielded weapons systems and, therefore, was assigned to Budget Activity 7, Operational Systems Development.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 Accomplishment/Planned Program
- (U) \$5,136 Systems Engineering/Program Management
- (U) \$58,662 RERP Design/Development
- (U) \$12,520 Prototype Fabrication/Install
- (U) \$6,004 Mission Support
- (U) \$3,168 Government Test Support
- (U) \$85,490 Total

(U) **FY 2003 (\$ in Thousands)**

- (U) \$0 Accomplishment/Planned Program
- (U) \$23,800 Systems Engineering/Program Management
- (U) \$150,856 RERP Design/Development
- (U) \$44,100 Prototype Fabrication/Install
- (U) \$4,574 Mission Support

Project 4835

Page 10 of 15 Pages

Exhibit R-2A (PE 0401119F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					040119F C-5 Airlift Squadrons			4835		
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2003 (\$ in Thousands) Continued</u>										
(U) \$6,986 Government Test Support										
(U) \$230,316 Total										
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U) \$0 Accomplishment/Planned Program										
(U) \$24,652 Systems Engineering/Program Management										
(U) \$197,476 RERP Design/Development										
(U) \$55,598 Prototype Fabrication/Install										
(U) \$4,731 Mission Support										
(U) \$8,050 Government Test Support										
(U) \$290,507 Total										
(U) <u>B. Project Change Summary</u>										
Since FY03 PB:										
C-5 RERP:										
-After the FY02 Appropriation, Congress made a General Reduction to RDT&E funds (-\$1.6M), an additional reduction (-\$4.2M) was taken in support of Small Business Innovative Research, a BTR of funds (-\$0.4M) was made, and a rescission (-\$0.6M) was made in support of Congressional action.										
-After the FY03 Appropriation, Congress made a General Reduction to RDT&E funds (-\$2.5M) and another adjustment (-\$3.3M) was taken for Inflation Savings.										
-Adjustments (+\$23.0M) were made to the FY04 program to match the OSD Cost Analysis Improvement Group (CAIG) estimate. Additionally, an adjustment for nonpay purchase inflation and budget issues (-\$5.4M) was made in FY04.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement,AF, BA-5,C-5 Mods, Reliability Enhancement and	0	0	0	0	149,331	443,994	711,577	891,641	6,561,488	8,758,031
Project 4835										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 040119F C-5 Airlift Squadrons				PROJECT 4835		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) Re-engining Program, BP-11										
(U) Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11	4,035	52,492	79,887	81,267	34,705				239,500	554,627
(U) D. Acquisition Strategy										
Reliability Enhancement and Re-engining Program (RERP): The approved FY02 acquisition strategy called for the modification of the entire C-5 aircraft fleet starting with the 50 B-models first. System Development & Demonstration (SDD) includes 1 C-5A and 2 C-5Bs. The program acquisition strategy is to consider every opportunity to use commercially available components and processes to modernize C-5 products and processes to meet or exceed required system performance and support, so as to renew the weapon system until 2040. The program acquisition strategy also seeks to construct a government/industry partnership to identify solutions, assign responsibility, and execute to achieve AMC requirements. RERP will use fleet availability, ownership cost, and system performance to balance solutions against program cost. Lockheed Martin Aero has been selected as the prime contractor through a sole source arrangement. Lockheed has selected General Electric (Powerplant) and Goodrich (Pylon) as the major subcontractors.										
(U) E. Schedule Profile										
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>	
		1	2	3	4	1	2	3	4	1
(U) Acquisition Strategy Panel (ASP) (FY00/1)										
(U) Pre-EMD Contract Award (FY00/2)										
(U) Milestone B/DAB (FY02/1)		*								
(U) SDD Contract Award (FY02/1)		*								
(U) SDD Start (FY02/1)		*								
(U) Preliminary Design Review (PDR)(FY03/2)							X			
(U) Critical Design Review (CDR)(FY04/1)									X	
(U) First Prototype Flight (FY06/1)										
(U) MS C (FY07/2)										
(U) LRIP Installations Begin (FY08/1)										
Project 4835	Page 12 of 15 Pages				Exhibit R-2A (PE 040119F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons	PROJECT 4835
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(U) **E. Schedule Profile Continued**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4

(U) SDD Complete (FY08/4)

* = completed event

X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					040119F C-5 Airlift Squadrons			4835		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	System Engineering/Program Management					5,136		23,800		24,652
(U)	RERP Design/Development					58,662		150,856		197,476
(U)	Proof Fabrication/Install					12,520		44,100		55,598
(U)	Mission Support					6,004		4,574		4,731
(U)	Government Test Support					3,168		6,986		8,050
(U)	Total					85,490		230,316		290,507
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin Aero (Pre-EMD)	FFP	Feb 00		47,075	47,075	0	0		0	47,075
Lockheed Martin Aero (SDD) CPAF		Dec 01		1,364,770	3,100	72,318	204,756	277,726	806,870	1,364,770
<u>Support and Management Organizations</u>										
WR-ALC/LA				6,792	600	2,054	1,012	1,042	2,084	6,792
ASC/GRA				22,589	3,910	3,950	3,562	3,689	7,478	22,589
<u>Test and Evaluation Organizations</u>										
418 Test Squadron (Edwards AFB)				35,849	3,645	3,168	6,986	8,050	14,000	35,849
(U) Government Furnished Property:										
<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Project 4835										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons			PROJECT 4835		
(U) Government Furnished Property Continued:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Misc. Equipment, and Parts	MO/RD ***	9 Sep 02	FY03-FY04		4,000	14,000			18,000
*** Miscellaneous Obligation/Reimbursement Document									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				50,175	76,318	218,756	277,726	806,870	1,429,845
Subtotal Support and Management				4,510	6,004	4,574	4,731	9,562	29,381
Subtotal Test and Evaluation				3,645	3,168	6,986	8,050	14,000	35,849
Total Project				58,330	85,490	230,316	290,507	830,432	1,495,075

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0401130F C-17 Aircraft

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	106,005	153,797	184,089	200,215	141,525	86,443	120,044	153,810	0	7,139,869
2569 C-17 Aircraft	106,005	153,797	184,089	200,215	141,525	86,443	120,044	153,810	0	7,094,986
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	0	0	0	0	0	0	0	0	0	44,883
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

FY02 and later funds for LAIRCM were ZBTed to PE 41134F.

(U) A. Mission Description

The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. The C-17 provides a vast increase in overall airlift capability necessary to replace and exceed the capabilities lost from retiring the aging C-141 fleet from the Air Force inventory. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century. RDT&E efforts support producibility enhancements and performance improvements.

(U) B. Budget Activity Justification

This program is budget activity 7, Operational System Development, because the program has completed Milestone III and is continuing producibility and performance improvements to support full-rate production and increase the operational capability of the C-17 through programmed modifications.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
07 - Operational System Development		0401130F C-17 Aircraft			
(U) C. Program Change Summary (\$ in Thousands)					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	109,513	157,213	135,674	7,139,869
(U)	Appropriated Value	109,513	157,213		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-1,662		
	b. Small Business Innovative Research	-2,992			
	c. Omnibus or Other Above Threshold Reprogram		-1,754		
	d. Below Threshold Reprogram				
	e. Rescissions	-516			
(U)	Adjustments to Budget Years Since FY 2003 PBR			48,415	
(U)	Current Budget Submit/FY 2004 PBR	106,005	153,797	184,089	7,139,869
(U)	<u>Significant Program Changes:</u>				
	A second project, 674886, was added to the C-17 Program Element for the Large Aircraft Infrared Countermeasures (LAIRCM). All FY 02 and later funds for LAIRCM were ZBTed to PE 41134F.				
	FY04 adjustment includes funding for additional C-17 Global Air Traffic Management (GATM) requirements, Mission Computer/Central Integrated Processor, and Cargo Delivery System Improvements.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401130F C-17 Aircraft	PROJECT 2569
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2569 C-17 Aircraft	106,005	153,797	184,089	200,215	141,525	86,443	120,044	153,810	0	7,094,986

(U) **A. Mission Description**
 The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. The C-17 provides a vast increase in overall airlift capability necessary to replace and exceed the capabilities lost from retiring the aging C-141 fleet from the Air Force inventory. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform the airlift mission well into this century. RDT&E efforts support producibility enhancements and performance improvements.

- (U) **FY 2002 (\$ in Thousands)**
- (U) \$54,620 Performance Improvement Development & Testing
 - (U) \$29,116 Systems Engineering / Program Management
 - (U) \$12,769 Contractor System Test & Evaluation
 - (U) \$9,500 Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test
 - (U) \$106,005 Total

- (U) **FY 2003 (\$ in Thousands)**
- (U) \$91,496 Performance Improvement Development & Testing
 - (U) \$35,900 Systems Engineering/Program Management
 - (U) \$16,051 Contractor System Test & Evaluation
 - (U) \$10,350 Producibility Enhancement/Performance Improvement (PE/PI) Government Flight Test
 - (U) \$153,797 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401130F C-17 Aircraft	PROJECT 2569
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(U) **A. Mission Description Continued**

(U) FY 2004 (\$ in Thousands)

(U) \$113,639	Performance Improvement Development & Testing
(U) \$39,200	Systems Engineering/Program Management
(U) \$18,550	Contractor System Test & Evaluation
(U) \$12,700	Producibility Enhancement/Performance Improvement (PE/PI) Government Flight Test
(U) \$184,089	Total

(U) **B. Project Change Summary**

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) APAF, MYP, BA02, PE0401130F	2,789,394	3,147,937	2,017,270	2,556,365	2,590,833	2,372,600	303,200	54,700	0	15,832,299
(U) APAF, ICS, PE0401130F	489,390	532,750	927,627	907,968	781,100	778,801	728,806	777,316	0	5,923,758
(U) APAF, A/C Mods, BA05, PE0401130F	98,764	49,357	20,113	9,248	221,059	254,040	446,408	438,568	0	1,537,557
(U) MilCon, Facilities, PE0401130F	40,983	73,133	70,047	61,800	92,400	148,800	7,400	1,400	0	495,963

(U) **D. Acquisition Strategy**

The C-17 Acquisition Strategy is based on five separate contracts to support the entire scope of the C-17 weapon system. These five contracts are: 1) a multi-year procurement (MYP) aircraft contract (to economically purchase the full complement of production aircraft) - (APAF); 2) a Producibility Enhancement and Performance Improvement (PE/PI) contract (to develop cost reduction changes, capability enhancements, and design fixes to service-revealed problems) - (RDT&E, APAF); 3) a Flexible Sustainment (field support) contract (to support the current and future fielded aircraft) - (APAF); 4) a MYP engine contract (for Government Furnished Equipment [GFE] engines) - (APAF); and 5) a set of simulator and training contracts: two aircrew training systems (ATS) contracts (one for aircrew simulators and one for training & concurrency upgrades), and a maintenance training device contract (for devices & concurrency upgrades) - (APAF).

The congressionally mandated Mobility Requirements Study (MRS), initially forwarded to Congress on 23 Jan 92 and updated in 1995 and again in 2001, validated the need for the C-17 aircraft. Two C-17 Defense Acquisition Board (DAB) decisions, contained in the 3 Nov 95 and 1 Feb 96 USD(A&T) Acquisition Decision

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003																																																																																																																								
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 2569																																																																																																																								
<p>(U) <u>D. Acquisition Strategy Continued</u></p> <p>Memoranda (ADM), directed the Air Force to proceed with a 120-aircraft production program and pursue a multi-year procurement for the last 80 aircraft. The FY96 Supplemental Appropriations Act and FY97 Defense Appropriations Act approved a 7-year MYP program. The Air Force is proceeding with an 80-aircraft MYP program (along with engines to support them) to complete a 120-aircraft total purchase at the maximum affordable rate (FY97-03 Quantity: 8-9-13-15-12-15-8), beginning with the economic order quantity (EOQ) funding in FY96. Sixty additional C-17s have been programmed at the end of the 80-aircraft MYP to replace Air Mobility Command's (AMC's) C-141 aircraft and meet requirements not included in the 120 aircraft program. The adjusted program is (FY03-07 Quantity): 7-11-14-15-13.</p> <p>During FY04 the Air Force will continue evaluation of commercial C-17 Civil Reserve Air Fleet (CRAF) applications and feasibility. The Air Force will evaluate commercial market opportunities with industry to reduce the Government's risk. In addition, commercial practices and design changes required for an FAA-certifiable version of the C-17 will be investigated. Airlift service agreements with commercial partners, however, will not be negotiated until authorized by law.</p> <p>New Starts For FY 04: Mission Computer Core Integration Processor (CIP)</p>																																																																																																																															
<p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> <th colspan="3" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th style="text-align: left;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Incremental Funding of Ongoing Performance Improvement Projects (FY03)</td> <td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Software Block 16 - (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) T1 Integrated Drive Generator (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Liquid Oxygen Bottle Crew Armor (12.7 mm) (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Required Navigation Performance (RNP) Improvements (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Army Communication Requirements (SECOMP-1) (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Covert Lighting (FY03)</td> <td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Mission Computer /Core Integrated Processor</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">X</td> </tr> </tbody> </table> <p>* = completed event - contract obligation X = planned event - contract obligation</p>											<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>			1	2	3	4	1	2	3	4	1	2	3	4	(U) Incremental Funding of Ongoing Performance Improvement Projects (FY03)					X							(U) Software Block 16 - (FY03)								X				(U) T1 Integrated Drive Generator (FY03)						X						(U) Liquid Oxygen Bottle Crew Armor (12.7 mm) (FY03)						X						(U) Required Navigation Performance (RNP) Improvements (FY03)						X						(U) Army Communication Requirements (SECOMP-1) (FY03)						X						(U) Covert Lighting (FY03)						X						(U) Mission Computer /Core Integrated Processor											X
	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>																																																																																																																								
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Project 2569			Page 5 of 7 Pages				Exhibit R-2A (PE 0401130F)																																																																																																																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0401130F C-17 Aircraft			2569				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Contractor Furnished Engineering & Test					96,378		143,317			171,250
(U)	Government Test & Other Government Costs (OGC)					9,627		10,480			12,839
(U)	Total					106,005		153,797			184,089
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Product Development Organizations</u>											
Boeing	C,FPI/FP	8/31/81	5,000,000	5,190,366	4,954,767				0	4,954,767	
Boeing	C,CPFF	7/13/95	1,352,095	1,352,095	483,368	96,378	143,317	171,250	627,230	1,521,543	
Pratt & Whitney	C,FP	5/24/91	25,346	25,346	25,346				0	25,346	
Boeing	C,FPI	4/14/89	83,885	83,885	83,885				0	83,885	
Pratt & Whitney	FP+EPA	4/18/95	7,831	7,831	7,506				0	7,506	
<u>Support and Management Organizations</u>											
Mission Support OGC	PO				97,615	0	0		0	97,615	
Site Activation OGC	PO				1,539				0	1,539	
Miscellaneous					22,400				0	22,400	
<u>Test and Evaluation Organizations</u>											
Combined Test Force	PO				259,245	9,500	10,350	12,700	74,000	365,795	
Wright Labs/Arnold Eng Dev Center	PO				10,357	127	130	139	807	11,560	
Other	PO				3,030				0	3,030	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 2569		
(U) Government Furnished Property:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				5,554,872	96,378	143,317	171,250	627,230	6,593,047
Subtotal Support and Management				121,554	0	0		0	121,554
Subtotal Test and Evaluation				272,632	9,627	10,480	12,839	74,807	380,385
Total Project				5,949,058	106,005	153,797	184,089	702,037	7,094,986

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401132F C-130J PROGRAM						PROJECT 5061	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5061	C-130J	0	9,784	13,551	37,818	13,582	56,622	27,432	68,573	0	233,650
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

C-130J program RDT&E funding provides for: 1) the development, integration, and testing of International Civil Aviation Organization (ICAO), Federal Aviation Administration (FAA), and DOD-mandated Global Air Traffic Management (GATM) and navigation safety (nav safety) capabilities for the C-130J weapon system; 2) the development, integration, and testing of aircraft modifications necessary to correct deficiencies identified in qualification and operational testing of this platform; and 3) the development, integration, and testing of C-130J enhancements identified by Air Mobility Command (AMC), which is the USAF lead operating command for the C-130J weapon system.

The C-130J is a medium-size transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The CC-130J aircraft, with its extended (by 15 ft) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission. Special mission variants of the C-130J conduct airborne psychological operations (EC-130J) and weather reconnaissance (WC-130J). These aircraft must be capable of worldwide operations.

USAF C/CC/EC/WC-130J aircraft, in their present Block 5.3 configuration, are partially GATM/nav safety compliant. Capabilities provided in the Block 5.3 configuration include Required Navigation Performance (RNP)-10 (miles), RNP-5, Basic Area Navigation (BRNAV), Traffic Alert and Collision Avoidance System (TCAS) Version 7.0, FM immunity for Instrument Landing System (aka protected ILS), and the aircraft communications system software necessary to operate VHF communications radios with 8.33 MHz frequency separation. These RDT&E funds will enable development, integration, and testing of the remaining GATM/nav safety requirements needed on USAF C/CC/EC/WC-130J aircraft. These capabilities include RNP-4, RNP-1, Terrain Approach Warning System (TAWS), Selective Availability Anti-Spoofing Module (SAASM) Global Positioning System (GPS), Local Area Augmentation System (LAAS), Wide Area Augmentation System (WAAS), Mode Select (Mode S) Beacon Transponder System with data link capability, Automatic Dependent Surveillance-Address (ADS-A), Automatic Dependent Surveillance-Broadcast (ADS-B), satellite communications (SATCOM) voice and data link capability, high frequency data link (HFDL), Controller-Pilot Data Link Communications (CPDLC), and AMC Mobility 2000 (M2K) communications.

The current C-130J Operational Requirements Document (ORD), validated 17 Apr 99, identifies the GATM/nav safety requirements for the C-130J. Supplemental guidance for the various GATM/nav safety requirements is provided via numerous ICAO, FAA, and DOD standards. Where possible, the C-130J GATM/nav safety

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
07 - Operational System Development	0401132F C-130J PROGRAM	5061			
(U) <u>A. Mission Description Continued</u>					
solution set will be common with other USAF/AMC weapon systems performing similar GATM/nav safety upgrades.					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U)	\$0	Accomplishment/Planned Program			
(U)	\$0	No Activity			
(U)	\$0	Total			
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U)	\$0	Accomplishment/Planned Program			
(U)	\$9,784	Initiate non-recurring engineering design and software development for GATM/nav safety requirements and aircraft deficiencies/product improvements.			
(U)	\$9,784	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>					
(U)	\$0	Accomplishment/Planned Program			
(U)	\$13,551	Continue non-recurring engineering design and software development. Conduct laboratory testing of GATM/nav safety hardware and software modifications. Procure and install hardware on flight test aircraft and one C-130J weapon system trainer.			
(U)	\$13,551	Total			
(U) <u>B. Budget Activity Justification</u>					
The C-130J is an operationally deployed weapon system, therefore BA 07 is appropriate. The funds provided in this budget activity are necessary to make USAF C/CC/EC/WC-130J aircraft fully compliant with known and emerging ICAO/FAA/DOD-mandated GATM/nav safety requirements and to correct weapon system deficiencies identified in initial flight testing.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	0	10,000	13,551	
(U)	Appropriated Value	0	9,784		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	0			
	b. Small Business Innovative Research	0			
	c. Omnibus or Other Above Threshold Reprogram	0			
Project 5061		Page 2 of 6 Pages		Exhibit R-2 (PE 0401132F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401132F C-130J PROGRAM			PROJECT 5061				
(U) C. Program Change Summary (\$ in Thousands) Continued											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
	d. Below Threshold Reprogram			0							
	e. Rescissions			0							
(U)	Adjustments to Budget Years Since FY 2003 PBR			0							
(U)	Current Budget Submit/FY 2004 PBR			0	9,784	13,551		233,650			
(U)	<u>Significant Program Changes:</u>										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Cost to Complete</u>	
(U)	AF RDT&E	0	9,784	13,551	37,818	13,582	56,622	27,432	68,573		227,362
(U)	Other APPN										
(U)	PE 0401132F, C-130J Procurement (BP1100)										
(U)	Mod MN-_1701 Blk 6.0				23,866	25,118	14,071	8,870	1,125		73,050
(U)	Mod MN-_6298 Blk 7.0						18,700	24,500	10,178		53,378
(U)	Mod MN-_5222 Blk 8.0								50,765		50,765
(U) E. Acquisition Strategy											
C/CC/EC/WC-130J aircraft will be modified using a 'block upgrade' strategy. The full GATM/nav safety requirement will be met in four block upgrades: Block 6.0, which begins with FY03 RDT&E funding and continues with FY04 RDT&E funding, Block 7.0, which will start in FY05, Block 8.0, which will start in FY07, and Block 9.0, which will start in FY09. The proportion of GATM/nav safety requirements allocated to Blocks 6.0 thru 9.0 was determined via a design trade study conducted by Lockheed Martin (the C-130J prime contractor) and verified by the C-130J system program office and AMC.											
Lockheed Martin will be the prime contractor for these efforts, perform the non-recurring engineering and, following the successful conclusion of flight testing and certification of each block upgrade, install production retrofit kits on USAF C/CC/EC/WC-130J aircraft.											
(U) F. Schedule Profile											
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 2003

BUDGET ACTIVITY
07 - Operational System Development

PE NUMBER AND TITLE
0401132F C-130J PROGRAM

PROJECT
5061

(U) F. Schedule Profile Continued

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Block 6.0 CECP on contract						X						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0401132F C-130J PROGRAM			5061		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Block 6.0 non-recurring engineering design/software development				0		9,784			6,426
(U)	Procure and install hardware (kits) on flight test aircraft									3,300
(U)	Conduct laboratory and developmental test and evaluation									500
(U)	Develop updates for aircraft technical publications and various data products (e.g., logistics support analyses, system safety analyses, etc.)									500
(U)	Develop weapon system trainer modifications									2,000
(U)	Procure, install, and test hardware on weapon system trainer									825
(U)	Total				0		9,784			13,551
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Lockheed Martin	CPFF	2Q/FY03								
Aeronautics, Marietta, GA										
<u>Product Development Organizations</u>										
Aeronautical Systems Center (AFMC), WPAFB, OH							9,784	13,551		23,335
<u>Support and Management Organizations</u>										
TBD										
<u>Test and Evaluation Organizations</u>										
Air Force Materiel Command (QT&E)										
Air Mobility Command (FDE)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development			0401132F C-130J PROGRAM		5061	
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
					<u>Budget to</u>	<u>Total</u>
					<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development					9,784	13,551
Subtotal Support and Management						23,335
Subtotal Test and Evaluation						
Total Project					9,784	13,551
						23,335

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)	PROJECT 4942
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4942 Large Aircraft Infrared Counter Measures (LAIRCM)	58,676	46,795	45,946	73,877	52,145	0	0	0	9,448	286,887
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2003, Project 674942, Large Aircraft Infrared Countermeasures (LAIRCM), was changed from Project 674885 (same name) to correct an administrative error. This action did not change program content nor the funding.

In FY01, the LAIRCM program was initially funded in the C-17 program (PE 0401130F, RDT&E). In FY02, LAIRCM's RDT&E efforts were transferred from the C-17 (PE 0401130F) and the C-130 (PE 0401115F) into a new PE which consolidates LAIRCM RDT&E and Procurement funds into a single PE (0401134F). In FY 2001, the LAIRCM program was appropriated \$44.883M into PE 0401130F, C-17 RDT&E.

(U) A. Mission Description

The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide a significantly improved defensive capability for transport and tanker aircraft against the proliferating IR Man-Portable Air Defense Systems (MANPADS) threat than today's use of flares. LAIRCM will require no operator intervention after the system is activated and will consist of an advanced integrated missile warning system or systems and an active laser turret countermeasures system. The multi-command Operational Requirements Document (ORD) -- LAIRCM ORD 314-92, was validated on 3 Aug 98.

LAIRCM Phase I will meet AMC's Urgent & Compelling Need by equipping 12 C-17s and 8 C-130s with LAIRCM Phase I hardware by end FY04. The LAIRCM Phase I Group B contract was awarded to Northrop Grumman on 28 Sep 01, using FY01 PE 41130F funds discussed in footnote above. On 18 Jan 02, Boeing went on contract to design and develop provisions to integrate LAIRCM on the C-17. On 7 Jun 02, the current LAIRCM contract with Northrop Grumman was modified to include designing and developing provisions to integrate LAIRCM on the C-130. The first LAIRCM-equipped C-17 will be delivered to AMC in May 2003, 12 months earlier than the original programmed date..

Beginning in FY04, LAIRCM Phase II will develop a mini-turret and the Next Generation Advanced Missile Warning System (NGMWS) and modify an additional 59 aircraft, completing 79 aircraft (43 C-17s, 24 C-130s & 12 KC-135s) required to handle JCS's One Small Scale Contingency (1 SSC). Funding to equip the 2nd SSC begins in FY09. The KC-135 funding starts in FY05.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)	4942
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$26,403	Continue design and software development for basic LAIRCM system plus the integration of LAIRCM on the C-17 which began in FY01 using LAIRCM's initial funding from C-17's PE 41130F.	
(U) \$19,548	1. Initial design, drawings, specifications, and development of peculiar support equipment for installation of LAIRCM on the C-130. 2. C-17 Kit buy Group A - one prototype kit Group B - one prototype kit 3. C-130 Kit buy Group A - one prototype kit Group B - one prototype kit 4. Software development for both C-17 and C-130	
(U) \$7,277	Government test activity	
(U) \$5,448	Program office support (TDY, training, supplies, and A&AS contract support)	
(U) \$58,676	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$6,520	Mature development of Basic LAIRCM system, support equipment, technical orders, etc.	
(U) \$20,801	Continue all efforts associated with the integration of the basic LAIRCM system onto the C-17 and C-130 platforms. Modify the first C-17 and begin OT&E. Begin modification of the second C-17 for kitproof. Modify the first C-130 for kitproof.	
(U) \$14,447	Gov't test and risk reduction	
(U) \$5,027	Program office support (TDY, training, supplies, and A&AS contract support).	
(U) \$46,795	Total	
Project 4942	Page 2 of 7 Pages	Exhibit R-2 (PE 0401134F)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)	PROJECT 4942
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(U) **A. Mission Description Continued**

(U) **FY 2004 (\$ in Thousands)**

(U) \$0	Accomplishments/Planned Program
(U) \$18,800	Start development of Mini-turret and the next generation advanced missile warning system (NGMWS).
(U) \$13,599	Mature development of basic LAIRCM system and support equipment, tech orders, etc.
(U) \$4,736	Completes all efforts associated with the integration of the basic LAIRCM system onto the C-17 and C-130 platforms. Continue C-17 OT&E.
(U) \$521	Complete government testing
(U) \$8,290	Program office support (TDY, A&AS contract support, training, supplies and award fee.
(U) \$45,946	Total

(U) **B. Budget Activity Justification**

Large Aircraft IR Countermeasures Program (LAIRCM): This project is in Budget Activity 7, Operational Systems Development as it is an electronic countermeasures systems upgrade to three existing weapons systems (C-17, C-130 and KC-135).

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	62,530	47,539	46,790	
(U) Appropriated Value	62,530	47,539		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-625	-503		
b. Small Business Innovative Research	-1,691			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-850			
e. Rescissions	-392			
(U) Adjustments to Budget Years Since FY 2003 PBR	-296	-241	-844	286,887
(U) Current Budget Submit/FY 2004 PBR	58,676	46,795	45,946	286,887

LAIRCM funding was moved to this PE from the C-17 and C-130 PEs (PEs 41130F and 41115F) during the preparation of the FY02 budget to allow better tracking of the LAIRCM funding as it is installed on C-17, C-130 and KC-135 aircraft.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)					4942		
(U) F. Schedule Profile Continued												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Phase I SDD (Oct 02 - Jun 04)	X										*	
(U) C-17 Aircraft Integration (May 02 - Nov 03)		X							*			
(U) C-17 #1 modification and OT&E (Feb 03 - Nov 03)						X			*			
(U) C-130 Aircraft Integration (April 02 - Jan 04)		X								*		
(U) C-130 # 1 Modification and OT&E (Nov 03 - Feb 04)									X	*		
(U) Operational Assessment: (Jun - Jul 02)		*										
(U) C-17 LRIP decision (Aug 02)			*									
(U) C-130 LRIP decision (Dec 02)			*									
(U) Phase II SDD (FY03-FY06)						X						
(U) Full Rate Production decision												*
X Denotes Start												
* Denotes Completion												
Project 4942				Page 5 of 7 Pages				Exhibit R-2 (PE 0401134F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development				0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)				4942			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Continue LAIRCM install design & software development					26,403		6,520		4,736	
(U)	Prototype kit buys and installs for the C-17 and the C-130					19,548		20,801		13,599	
(U)	Government test and risk reduction					7,277		14,447		521	
(U)	Begin development of mini-turret and Next Generation Advanced Missile Warning System (NGAWS).					0		0		18,800	
(U)	Program office support (A&AS contract support, TDY, etc.)					5,448		5,027		8,290	
(U)	Total					58,676		46,795		45,946	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
Total System Cost	CPAF	28 Sep 01	N/A	N/A	0	28,944	13,269	35,378	135,470	213,061	
<u>Product Development Organizations</u>											
Northrop Grumman	CPAF	28 Sep 01			0	6,538	9,731	1,756	0	18,025	
Boeing	CPAF	18 Jan 02			0	10,660	11,070	2,980		24,710	
TBD											
<u>Support and Management Organizations</u>											
ASC/GRI					0	5,441	5,448	5,311		16,200	
<u>Test and Evaluation Organizations</u>											
Various Gov't Test Organizations	Various	Various			0	7,093	7,277	521		14,891	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE				
BUDGET ACTIVITY					PROJECT				
07 - Operational System Development					0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)			4942	
(U) <u>Government Furnished Property:</u>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
VIPER Laser	On loan from								
	USSOCOM								
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
				0	28,944	13,269	35,378	135,470	213,061
Subtotal Product Development				0	17,198	20,801	4,736	0	42,735
Subtotal Support and Management				0	5,441	5,448	5,311		16,200
Subtotal Test and Evaluation				0	7,093	7,277	521		14,891
Total Project				0	58,676	46,795	45,946	135,470	286,887

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
07 - Operational System Development		0401218F KC-135s								4494	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4494 KC-135 Aging Aircraft Program	5,067	1,465	1,473	1,082	1,493	1,104	1,119	1,134	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

(U) A. Mission Description

This program, in part, supports the aging aircraft corrosion and fatigue project CORAL REACH. CORAL REACH studies include the analysis and testing efforts in the area of aging aircraft, to include structural, corrosion, fatigue, and stress corrosion cracking. Additionally, the Functional System Integrity Program proactively examines individual aircraft systems for potential impacts due to aging components. The USAF will utilize these activities to improve KC-135 Programmed Depot Maintenance efficiency and to provide direction for future aging aircraft efforts to maintain the KC-135 as a viable airframe. CORAL REACH results provided accurate data for incorporation into the KC-135 Economic Life Study. The KC-135 Economic Life Study consisted of studies for structure, systems, and component support as well as cost benefit analyses to support an Analysis of Alternatives (AOA). The AOA, deferred pending outcome of the KC-767A lease negotiations, will address replacement for the KC-135 based on economic decision points and requirements.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$925 Corrosion/crack growth rate and fatigue determination and testing
- (U) \$884 Functional Systems Integrity Program (FSIP)
- (U) \$3,258 Mission support/contractor support
- (U) \$0 Analysis of Alternatives
- (U) \$5,067 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$338 Corrosion/crack growth rate and fatigue determination and testing
- (U) \$200 Basic materials test and predictive technique
- (U) \$600 Functional Systems Integrity Program (FSIP)
- (U) \$327 Mission support/contractor support
- (U) \$1,465 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401218F KC-135s	PROJECT 4494																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$248 Corrosion/crack growth rate and fatigue determination and testing</p> <p>(U) \$52 Basic materials test and predictive technique</p> <p>(U) \$700 Functional Systems Integrity Program</p> <p>(U) \$473 Mission support/contractor support</p> <p>(U) \$1,473 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This effort is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity 7, Operational Systems Development.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">5,416</td> <td style="text-align: right;">1,497</td> <td style="text-align: right;">1,500</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">5,416</td> <td style="text-align: right;">1,497</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-203</td> <td style="text-align: right;">-15</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-146</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-17</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">-27</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">5,067</td> <td style="text-align: right;">1,465</td> <td style="text-align: right;">1,473</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Not applicable</p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	5,416	1,497	1,500	TBD	(U) Appropriated Value	5,416	1,497		TBD	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-203	-15			b. Small Business Innovative Research	-146				c. Omnibus or Other Above Threshold Reprogram		-17			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR			-27		(U) Current Budget Submit/FY 2004 PBR	5,067	1,465	1,473	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
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Project 4494	Page 2 of 5 Pages	Exhibit R-2 (PE 0401218F)																																																							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development							PE NUMBER AND TITLE 0401218F KC-135s			PROJECT 4494			
(U) D. Other Program Funding Summary (\$ in Thousands)													
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
(U) E. Acquisition Strategy													
The acquisition strategy consists primarily of separate task orders (with separate statements of work) ranging from fixed price to cost plus contracts. These task orders address a myriad of aging aircraft activities against existing contract vehicles, such as the SPO-managed KC-135 Fleet Support Contract and Design Engineering Program contracts managed through the Air Logistics Centers. The Analysis of Alternatives contracting vehicle has not yet been determined. AOA will be led by AMC/XP.													
(U) F. Schedule Profile													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Corrosion & Fatigue Testing		X	X	X	X	X		X		X		X	
(U) Materials Test & Predictive Tech							X	X		X		X	
(U) FSIP (see Note 2)		X	X	X	X	X	X	X	X	X	X	X	X
(U) Mission Support		X	X	X	X	X	X	X	X	X	X	X	X
(U) Analysis of Alternatives (deferred)													
Note 1: * Represents a Completed Event: X Represents a Planned Event													
Note 2: FSIP will continue to examine additional aircraft systems as required while monitoring those systems that have previously been examined.													
Project 4494				Page 3 of 5 Pages				Exhibit R-2 (PE 0401218F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0401218F KC-135s			4494		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Corrosion/crack growth determination and testing				925		338		248	
(U)	Basic materials test and predictive technique				0		200		52	
(U)	Functional Systems Integrity Program (FSIP)				884		600		700	
(U)	Mission support/contractor support				3,258		327		473	
(U)	Analysis of Alternatives				0					
(U)	Total				5,067		1,465		1,473	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Boeing	C/KC-135 Fleet Support SS/FFP	Oct 97-Mar 03	TBD	TBD	2,405	1,786	944	1,199	Continuing	TBD
<u>Support and Management Organizations</u>										
ARINC, Frontier, other support contractors	Design Engineering Program (DEP) C/FP	Oct 97-Mar 03	TBD	TBD	198	2,981	321	224	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
FAA, Wright Labs, NASA, etc.	Project Order/MPIR	Oct 97-Mar 03	TBD	TBD	119	300	200	50	Continuing	TBD
Project 4494					Page 4 of 5 Pages			Exhibit R-3 (PE 0401218F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development	0401218F KC-135s				4494	
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	2,405	1,786	944	1,199	TBD	TBD
Subtotal Support and Management	198	2,981	321	224	TBD	TBD
Subtotal Test and Evaluation	119	300	200	50	TBD	TBD
Total Project	2,722	5,067	1,465	1,473	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
07 - Operational System Development		0401219F KC-10S								4496	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4496	KC-10 GATM	21,310	10,278	2,306	0	0	0	0	0	0	89,150
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	1

(U) A. Mission Description

Global Air Traffic Management (GATM) is based on evolving Communication, Navigation and Surveillance (CNS) and Free Flight concepts. Key elements of its architecture are Flight Management System (FMS), Dual Multi-Mode Receiver (MMR), Dual Communications Management Unit (CMU), and Communications Datalinks (HF, VHF, SATCOM). Communications upgrades include a data link to augment/replace voice communications. These upgrades include Beyond Line of Sight (BLOS) data links and Line of Sight (LOS) digital data links. The navigation capabilities include a fully integrated GPS and advanced flight management system. The surveillance capabilities include automatic aircraft position reporting (both enroute and oceanic).

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$3,868 System Engineering/Program Management/FAA Certification
- (U) \$12,462 Kit Design/Development
- (U) \$3,255 Prototype Fabrication/Install
- (U) \$1,464 Award Fee
- (U) \$261 Mission Support
- (U) \$21,310 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$2,598 System Engineering/Program Management/FAA Certification
- (U) \$5,587 Kit Design/Development
- (U) \$520 Prototype Fabrication/Install
- (U) \$1,363 Award Fee
- (U) \$210 Mission Support
- (U) \$10,278 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S	PROJECT 4496																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$1,335 System Engineering/Program Management/FAA Certification</p> <p>(U) \$800 Data</p> <p>(U) \$51 Award Fee</p> <p>(U) \$120 Mission Support</p> <p>(U) \$2,306 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This effort supports a fielded weapon system and is assigned to Budget Activity 7, Operational Systems Development.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">22,774</td> <td style="text-align: right;">10,506</td> <td style="text-align: right;">2,356</td> <td style="text-align: right;">90,892</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">22,774</td> <td style="text-align: right;">10,506</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: right;">-353</td> <td style="text-align: right;">-111</td> <td></td> <td style="text-align: right;">-464</td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-616</td> <td></td> <td></td> <td style="text-align: right;">-616</td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-117</td> <td></td> <td style="text-align: right;">-117</td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-495</td> <td></td> <td></td> <td style="text-align: right;">-495</td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">-50</td> <td style="text-align: right;">-50</td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">21,310</td> <td style="text-align: right;">10,278</td> <td style="text-align: right;">2,306</td> <td style="text-align: right;">89,150</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> None</p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	22,774	10,506	2,356	90,892	(U) Appropriated Value	22,774	10,506			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-353	-111		-464	b. Small Business Innovative Research	-616			-616	c. Omnibus or Other Above Threshold Reprogram		-117		-117	d. Below Threshold Reprogram	-495			-495	e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR			-50	-50	(U) Current Budget Submit/FY 2004 PBR	21,310	10,278	2,306	89,150
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
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Project 4496	Page 2 of 5 Pages	Exhibit R-2 (PE 0401219F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0401219F KC-10S	PROJECT 4496
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(U) D. Other Program Funding Summary (\$ in Thousands)

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN	12,002	8,156	13,680	58,636	82,317	35,087	18,014	3,555		231,447
PE#401219F / KC-10 Squadrons, Aircraft Procurement, AF, BA-5, KC-10 Mods, GATM, BP-11										

(U) E. Acquisition Strategy

A sole source cost plus award fee contract was awarded to Boeing, the aircraft manufacturer, for the Engineering, Manufacturing, and Development (EMD) effort. The contract is managed at the KC-10 System Program Office at OC-ALC. Installs are planned to be performed by the KC-10 Contractor Logistic Support Contractor.

(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Acquisition Strategy Plan* (1QFY99)												
(U) EMD Contract Award* (2QFY00)												
(U) Prototype Installation					X		*					
(U) Production Decision												
(U) First Flight												
(U) Flight Certification Test								X		*		
(U) AF OT&E Complete												
(U) 1st Production Aircraft Delivery (1QFY04)												X
(U) Low Rate Initial Production												X

Note: * Represents a Completed Event: X Represents a Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0401219F KC-10S			4496			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	System Engineering/Program Management/FAA Certification					3,868		2,598		1,335	
(U)	Kit Design/Development					12,462		5,587			
(U)	Prototype Fabrication/Install					3,255		520			
(U)	Award Fee					1,464		1,363		51	
(U)	Mission Support					261		210		120	
(U)	Data									800	
(U)	Total					21,310		10,278		2,306	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Boeing	SS/CPAF	Sep 99-Mar 04	93,543	95,812	53,504	21,049	10,278	2,306		87,137
<u>Product Development Organizations</u>											
	Program Management (Government)						48	261			309
<u>Support and Management Organizations</u>											
	ARINC, Frontier, other support contractors	C/FP	Sep 99-Mar 01			533					533
	AF Mission Support System (AFMSS)	T&M	Mar 00			1,000					1,000
<u>Test and Evaluation Organizations</u>											
	418 Test Squadrn (Edwards AFB)	AFFTC T&M	Jan 01				74				74
	Joint Spectrum Center	T&M	Apr 00				97				97
Project 4496											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE February 2003

BUDGET ACTIVITY 07 - Operational System Development PE NUMBER AND TITLE 0401219F KC-10S PROJECT 4496

(U) Government Furnished Property:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
TBD									
<u>Support and Management Property</u>									
TBD									
<u>Test and Evaluation Property</u>									
TBD									
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
				53,504	21,049	10,278	2,306		87,137
Subtotal Product Development				48	261				309
Subtotal Support and Management				1,533					1,533
Subtotal Test and Evaluation				171					171
Total Project				55,256	21,310	10,278	2,306		89,150

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0605024F Anti-Tamper Technology Executive Agent						PROJECT 5066	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5066	Anti-Tamper Technology Executive Agent	0	8,808	7,855	7,879	7,806	7,792	7,757	7,715	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Air Force is the Executive Agent for implementing Anti-Tamper (AT) policy as well as for developing AT technology for DoD. As Executive Agent, the Air Force will coordinate the technology development among the Services, DoD Agencies and laboratories, and with industry. The Executive Agent is also charged to develop a technology roadmap, establish a data bank/library, implement policy, provide proper security mechanisms, and conduct effective AT validation.

The Anti-Tamper Technology Development will occur in the following areas: advanced sensor hardware, generic electronic hardware, signature control, access detection & denial, software, and effectiveness. In the advanced sensor hardware area, antenna arrays, focal plane arrays, & T/R modules are areas of importance for AT technology development. AT technology for other advanced sensor hardware will also be developed as required. In the general electronic hardware area, AT technology development will be evaluated first for memory circuits and processors, followed by other electronic hardware. In the signature control area, AT technology development will be evaluated for radar absorbing materials and other low observable techniques. AT technology development for other signature control areas will be evaluated on a case-by-case basis. Measures of Effectiveness (MOEs) and the verification and validation of Anti-Tamper are also areas required further development. The technical support will focus on Sandia National Laboratories (SNL). SNL has been the focal point for Anti-Tamper and the USAF plans to use them as such. This includes leveraging their expertise to assist in educating engineers and program managers about Anti-Tamper, as well as providing technical support to DoD weapon system programs in developing Anti-Tamper technology. The program management activities will coordinate the technology development and establish the Anti-Tamper database/library.

The purpose of developing AT measures is to protect critical technologies in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT technology will permit the U.S. to preserve its critical weapons systems lead while also satisfying customer needs. Furthermore, AT will add longevity to critical technologies by deterring efforts to reverse engineer, or develop weapon countermeasures against a system or system component.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$0 No Activity
- (U) \$0 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
07 - Operational System Development		0605024F Anti-Tamper Technology Executive Agent		5066	
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$7,048	Anti-Tamper Technology Development			
(U)	\$590	Technical Support			
(U)	\$1,170	Program Management Activity (PMA)			
(U)	\$8,808	Total			
(U) <u>FY 2004 (\$ in Thousands)</u>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$6,510	Anti-Tamper Technology Development			
(U)	\$245	Technical Support			
(U)	\$1,100	Program Management Activity			
(U)	\$7,855	Total			
(U) <u>B. Budget Activity Justification</u>					
This program is in Budget Authority (BA) 7 Operational System Development because Anti-Tamper technologies have applicablity to operational systems.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	0	8,000	8,000	TBD
(U)	Appropriated Value		9,000		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research		0		
	c. Omnibus or Other Above Threshold Reprogram		-90		
	d. Below Threshold Reprogram				
	e. Rescissions		-102		
(U)	Adjustments to Budget Years Since FY 2003 PBR			-145	
(U)	Current Budget Submit/FY 2004 PBR		8,808	7,855	TBD
(U) <u>Significant Program Changes:</u>					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0605024F Anti-Tamper Technology Executive Agent			PROJECT 5066			
(U) D. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) Other APPN											
(U) E. Acquisition Strategy											
Program Research and Development Announcements (PRDAs) will be used for the Anti-Tamper technology development. A sole source contract will be used for some of the technical support.											
(U) F. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>		
				1	2	3	4	1	2	3	4
(U) Anti-Tamper Technology Development PRDAs on contract								X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0605024F Anti-Tamper Technology Executive Agent			5066			
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		
(U)	AT Technology Development						7,048		6,510		
(U)	Technical Support						590		245		
(U)	PMA						1,170		1,100		
(U)	Total						8,808		7,855		
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
	AFRL/XPJ	PRDA	TBD	7,048	7,048		7,048	6,510	Continuing	TBD	
	Sandia National Lab	Sole Source	Various	590	590		590	245	Continuing	TBD	
<u>Support and Management Organizations</u>											
	AFRL/XPJ -PMA	Various	TBD	1,170	1,170		1,170	1,100	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
						<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	
<u>Subtotals</u>										<u>Total Program</u>	
	Subtotal Product Development							7,638	6,755	TBD	TBD
	Subtotal Support and Management							1,170	1,100	TBD	TBD
	Subtotal Test and Evaluation										
	Total Project							8,808	7,855	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-IF)					PROJECT 3326		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3326	Precision Measurement & Calibration	2,595	2,296	1,406	1,435	1,404	1,426	1,447	1,467	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,165 Complete the target simulator radiometer; and the domain engineered pyroelectric detector projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.</p> <p>(U) \$620 Continue development of standards for radar support, RF communication systems, and radar cross-section range measurements.</p> <p>(U) \$120 Continue the low gas flow MAP; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.</p> <p>(U) \$380 Complete the next generation sampling comparator probe project; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.</p> <p>(U) \$75 Complete the low level dosimetry traceability project and large area beta source projects and continue development of nation standards for calibration of ionizing radiation hazard instrumentation.</p>											
Project 3326		Page 1 of 5 Pages					Exhibit R-2 (PE 0702207F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0702207F Depot Maintenance (Non-IF)	3326
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$235	Continue development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$2,595	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$950	Complete the spectral radiance/irradiance measurement capability and the angle/temperature dependence of emittance projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.	
(U) \$400	Complete the improved thin film multijunction thermal converter project, the enhanced wideband oscilloscope characterization, the sampling system for improved wideband measurements, the AC voltage detector project and teh calibration support for multi-frequency capacitance bridge project. Continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
(U) \$556	Complete the co-conical field generation system and continue development of standards for radar support, RF communication systems, and radar cross section range measurements.	
(U) \$240	Complete gas flow measurement assurance program (MAP); and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.	
(U) \$150	Continue the development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$2,296	Total	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$405	Continue development of standards for radar support, RF communication systems, and radar cross-section range measurements.	
(U) \$100	Complete the wind tunnel characterization project; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.	
(U) \$325	Continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
(U) \$60	Complete development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$516	Continue development of national measurement standards to support Air Force infrared/laser/electro-optical weapon systems and support equipment.	
(U) \$1,406	Total	
(U) <u>B. Budget Activity Justification</u>		
This program is in budget activity 7 - Operational System Development because it supports operational systems.		
Project 3326	Page 2 of 5 Pages	Exhibit R-2 (PE 0702207F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0702207F Depot Maintenance (Non-IF)			3326				
(U) C. Program Change Summary (\$ in Thousands)											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			1,533	1,569	1,406		TBD			
(U)	Appropriated Value			1,533	1,569						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-138							
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram										
	d. Below Threshold Reprogram										
	e. Rescissions										
(U)	Adjustments to Budget Years Since FY 2003 PBR			1,200	727						
(U)	Current Budget Submit/FY 2004 PBR			2,595	2,296	1,406		TBD			
(U) Significant Program Changes:											
The additional funding in FY03 is to expedite the completion of several metrology projects such as develop: hydrazine detector calibration methods; methods to characterize bench top wind tunnels, and artifacts and procedures necessary to characterize radar cross section ranges such as the Holloman AFB NRTF facility. The funding will also be used to begin projects such as developing improved methods to more accurately calibrate infrared target simulators, developing standards supporting advanced chem/bio warfare measurements.											
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U) E. Acquisition Strategy											
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.											
(U) F. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U)	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-IF)			PROJECT 3326			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Quality Assurance (Develop Measurement Standards & Calibration Support)					2,578		2,276		1,386	
(U)	Travel					17		20		20	
(U)	Total					2,595		2,296		1,406	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	National Institute of Standards & Technology	MIPR (DD FORM 448)	Varies	TBD	TBD	18,547	2,297	2,141	1,226	Continuing	TBD
	Department of Energy	MIPR (DD FORM 448)	Varies	TBD	TBD	229	281	135	160	Continuing	TBD
	AFMC	In House	Varies	TBD	TBD	195	17	20	20	Continuing	TBD
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708011F Industrial Preparedness						PROJECT 2865	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2865	Manufacturing Technology	55,694	44,381	39,396	40,112	39,505	40,157	40,787	41,336	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: Program funding was reduced in FY 2003 from FY 2002 due to higher priority Air Force requirements.

(U) A. Mission Description

The DoD Manufacturing Technology (ManTech) program is mandated by Section 2521, Title 10, United States Code, to create an affordable, world-class industrial base manufacturing capability responsive to warfighter's needs. The Air Force ManTech major program tenets are: improvement of manufacturing processes and technologies; collaboration with Government program offices, industry, and academia; investments in technologies beyond reasonable risk level for industry alone; cost-sharing; multiple system/customer applications; potential for significant return on investment; and customer commitment to implement. To this end, ManTech develops, demonstrates, and transitions advanced manufacturing processes and technologies to reduce costs, improve quality/capability, and shorten cycle times of weapon systems during design, development, production, and sustainment. ManTech projects include efforts that respond to Government program office acquisition and sustainment requirements to reduce cost, schedule, cycle time, and risks during transition of technology. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. ManTech's project scope often extends beyond factory floor manufacturing/repair processes, encompassing every activity within an industrial enterprise, ranging from business management tools to supplier base interactions and performance. ManTech program efforts also enhance repair/remanufacture capabilities to affordably sustain the aging weapon systems inventory, thereby, reducing total ownership costs. ManTech objectives are conducted through partnership with all industry levels, from large prime contractors to small material and parts vendors. Program planning centers on the aeronautical, sustainment, armament/directed energy, and command, control, intelligence, surveillance, and reconnaissance sectors of the industrial base. Note: In FY 2003, Congress added \$3.2M for Prototype Low-Observable Coatings Development, \$2.0M for Laser Peening for F-119 Engine, \$1.5M for Technology Insertion Demonstration and Evaluation, and \$1.0M for Bipolar Wafer-Cell Nickel-Metal Hydride Aircraft Battery.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishments/Planned Program
- (U) \$24,870** Launched affordable and efficient manufacturing technology investigations for critical, high quality and reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft (e.g., missile warning sensor). Conducted high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Leveraged specialty aerospace metals work into metals affordability initiatives focused on laser forming, casting, welding, and forging. Focused long-term projects using lean enterprise integration tools. Delivered final version of the Lean Enterprise

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0708011F Industrial Preparedness

PROJECT

2865

(U) A. Mission Description Continued

(U) FY 2002 (\$ in Thousands) Continued

Self-Assessment Tool and Transition to Lean Roadmaps to aerospace industry. Completed Lean Education curriculum for Defense Acquisition University. Continued rapid response productivity improvement efforts with selected high value programs. Continued activities aimed at manufacture of more affordable low-observable coatings. Established processing parameters for optimized manufacture of high strength, low weight fiber composites for transition to C-17. Planned effort to reduce high-cycle fatigue damping in engine components. Completed investigations for manufacturing modeling and simulation activity to reduce the number of engineering change orders generated in manufacturing enterprises (Integrated Manufacturing Simulation for Affordability).

(U) \$13,267

Provided cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems to enhance mission readiness. Completed reconfigurable tool for rapid, accurate sheet metal stretch forming. Completed transition of lean concepts applied to maintenance, repair, and overhaul activities at organic and contractor depots. Reduced repair and maintenance cycle time for aging systems and established remanufacturing capabilities which rapidly generate standardized replacement parts on demand. Continued pilot efforts to assess benefits derived from inserting electronic parts obsolescence management tools into weapon system production programs. Initiated technical effort to extend the life of critical, high-value rotating engine components exposed to high cycle fatigue environments. Continued rapid response productivity improvement efforts to overcome structural damage of hot trailing edges found in the wake of hot engine exhaust, improve Air Logistics Center depaint capabilities, and implemented sustainment improvements for Air Logistic Center engine refurbishment shops.

(U) \$7,169

Pursued efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Established system-level, pilot efforts to assess potential benefits accrued from inserting best practices from small and medium size suppliers into weapon system production programs (e.g., Joint Direct Attack Munition, AIM-9X). Initiated joint program with Navy to provide lower drift rate Inertial Measurement Unit (IMU) for Micro-Electro-Mechanical Systems. Continued rapid response productivity improvement efforts to: increase production (surge) rate of IMUs for precision-guided munitions; provide high quality glass material acceptable for use in airborne laser turret windows; and enhance low-observable coatings for structural composite airframes in air launched munitions.

(U) \$5,348

Provided affordable, flexible manufacturing process development to reduce cost and lead-time for higher performance spacecraft and launch vehicles. Established effective and efficient manufacturing technology for critical high quality, reliable electronic components and assemblies required for surveillance, tracking communications links, and data/signal processing. Conducted pilot efforts to demonstrate enhanced and efficient manufacturing capability for low-rate production capability of components and weapon systems in the space, launch, and command, control, communications, and intelligence industrial base sectors. Continued efforts to rapidly respond to space sector manufacturing issues (e.g., leverage standard modular spacecraft architecture using flexible multi-mission production lines to achieve cost and cycle time reductions). Continued rapid response productivity improvement effort to improve affordability of space-based radar/electronic components.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0708011F Industrial Preparedness	2865
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$4,049	Developed tasks associated with Advanced Low-Observable Coatings (e.g., increased sputtering rate during coating application).	
(U) \$991	Developed tasks associated with Laser Peening for F-119 Engine (e.g., increased damage tolerance of integrally bladed rotors).	
(U) \$55,694	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$19,540	Continue affordable and efficient manufacturing technology investigations for critical, high quality and reliable structural, propulsion, stealth, and electronic components and assemblies required for existing and next generation aircraft. Continue high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Complete metals affordability initiatives focused on laser forming, casting, welding, and forging. Continue activities aimed at manufacture of more affordable low-observable coatings. Start effort to reduce high-cycle fatigue damping in engine components. Initiate rapid response productivity improvement effort to address manufacturing issues related to agile acquisition of low-rate production airframes.	
(U) \$12,185	Pursue cost-effective repair and manufacturing technologies for affordable sustainment of aircraft and turbine engine components. Continue pilot efforts to assess benefits derived from inserting electronic parts obsolescence management tools into weapon system production programs. Continue technical effort to extend the life of critical, high-value rotating engine components exposed to high cycle fatigue environments (Engine Rotor Life Extension effort).	
(U) \$4,094	Continue development of efficient and cost-effective manufacturing methods for high performance, high reliability electronics for advanced tactical missiles and aircraft missile sensors. Continue joint program with Navy to provide a lower drift-rate Inertial Measurement Unit (IMU) for Micro-Electro-Mechanical Systems. Complete rapid response productivity improvement efforts to increase production (surge) rate of IMUs for precision-guided munitions and provide high quality glass material acceptable for use in airborne laser turret windows.	
(U) \$1,119	Develop risk reduction efforts addressing critical manufacturing issues for various command, control, intelligence, surveillance, and reconnaissance platforms. Focus efforts on components such as electronically scanned arrays to improve producibility, reliability, and affordability.	
(U) \$3,093	Develop tasks associated with Prototype Low-Observable Coatings Development (e.g., increase sputtering rate during coating application).	
(U) \$1,933	Develop tasks associated with Laser Peening for F-119 Engine (e.g., increase damage tolerance of integrally bladed rotors).	
(U) \$1,451	Develop tasks associated with Technology Insertion Demonstration and Evaluation (e.g., supply chain requirements definition, system development, and demonstration).	
Project 2865	Page 3 of 8 Pages	Exhibit R-2 (PE 0708011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY 07 - Operational System Development		February 2003
PE NUMBER AND TITLE 0708011F Industrial Preparedness		PROJECT 2865
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2003 (\$ in Thousands) Continued</u>	
(U)	\$966	Develop tasks associated with Bipolar Wafer-Cell Nickel-Metal Hydride Aircraft Battery (e.g., performance testing and environmental testing).
(U)	\$44,381	Total
(U)	<u>FY 2004 (\$ in Thousands)</u>	
(U)	\$0	Accomplishments/Planned Program
(U)	\$16,423	Pursue affordable and efficient manufacturing technology investigations for critical, high quality, reliable structural, propulsion, stealth, and electronic components and assemblies required for existing and next generation aircraft. Complete manufacturability efforts of laser components for the Affordable Missile Warning Sensor for large aircraft. Continue high value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Investigate and develop manufacturing capabilities for more affordable low-observable structures. Continue effort to reduce high-cycle fatigue damping in engine components. Initiate/continue rapid response producibility improvement efforts with selected high value programs.
(U)	\$8,085	Pursue cost-effective repair and manufacturing technologies for affordable sustainment of aircraft and turbine engine components. Complete pilot efforts to demonstrate benefits from inserting electronic parts obsolescence management tools into weapon system production programs. Maintain technical effort to extend the life of critical, high-value rotating engine components, which have been exposed to high cycle fatigue environments (e.g., Engine Rotor Life Extension effort). Initiate/continue rapid response producibility improvement efforts with selected high value programs.
(U)	\$4,735	Continue to pursue efficient and cost-effective manufacturing methods for high performance, high reliability components for advanced tactical missiles, aircraft missile sensors (e.g., Inertial Measurement Unit for Micro-Electro-Mechanical Systems effort), and directed energy systems. Initiate manufacturing technology efforts supporting producibility/affordability improvements in high priority precision-guided munitions components. Initiate/continue rapid response producibility improvement efforts with selected high value programs.
(U)	\$10,153	Continue efforts to address critical electronics manufacturing technologies for various command, command, control, intelligence, surveillance, and reconnaissance platforms. Focus efforts on components such as electronically scanned arrays to improve producibility, reliability, and affordability. Initiate/continue rapid response producibility improvement efforts with selected high value programs.
(U)	\$39,396	Total
(U)	<u>B. Budget Activity Justification</u>	
	ManTech is in Budget Activity 7, Operational System Development, since it provides support for systems in design, production, and/or operational use. ManTech is part of the Industrial Preparedness Program Element supporting the Defense Planning Guidance and the Air Force Planning Guidance.	
Project 2865		Exhibit R-2 (PE 0708011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0708011F Industrial Preparedness			2865				
(U) C. Program Change Summary (\$ in Thousands)											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			58,406	37,581	40,319					
(U)	Appropriated Value			58,982	45,281						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-576	-478						
	b. Small Business Innovative Research			-1,538							
	c. Omnibus or Other Above Threshold Reprogram				-422						
	d. Below Threshold Reprogram			-900							
	e. Rescissions			-274							
(U)	Adjustments to Budget Years Since FY 2003 PBR					-923					
(U)	Current Budget Submit/FY 2004 PBR			55,694	44,381	39,396		TBD			
(U)	<u>Significant Program Changes:</u>										
	Not applicable.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
	Not Applicable.										
(U)	<u>E. Acquisition Strategy</u>										
	All major contracts in this Program Element were awarded after full and open competition.										
(U)	<u>F. Schedule Profile</u>										
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0708011F Industrial Preparedness					2865				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Manufacturing technology for aeronautical systems														
(U) Request for Proposal Release		*				X			X					
(U) Contract Awards			*				X				X			
(U) Repair/remanufacture technologies for weapon systems sustainment														
(U) Request for Proposal Release	*													
(U) Contract Awards		*												
(U) Manufacturing technologies for missiles, munitions, directed energy														
(U) Request for Proposal Release	*								X					
(U) Contract Awards		*	*								X			
(U) Mfg for command, control, intel, surveillance, and reconnaissance														
(U) Request for Proposal Release	*					X			X					
(U) Contract Awards		*					X				X			
* = completed, X = planned														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708011F Industrial Preparedness			PROJECT 2865		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Manufacturing technologies for aeronautical systems					24,870		19,540		16,423
(U)	Repair/remanufacture technologies for weapon system sustainment					13,267		12,185		8,085
(U)	Manufacturing technologies for missiles, munitions, and directed energy weapons					7,169		4,094		4,735
(U)	Manufacturing technologies for command, control, intelligence, surveillance, and reconnaissance					5,348		1,119		10,153
(U)	Bipolar Wafer-Cell Nickel Metal-Hydride Aircraft Battery					0		966		
(U)	Prototype Low-Observable Coatings Development					4,049		3,093		
(U)	Laser Peening for F-119 Engine					991		1,933		
(U)	Technology Insertion Demonstration and Evaluation							1,451		
(U)	Total					55,694		44,381		39,396
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Advanced Technology Inst	Coop Agmt	Aug 00	N/A	N/A	500	325	0	0	0	825
Aerojet-General Corp	Coop Agmt	Various	N/A	N/A	1,850	300	0	0	0	2,150
Anteon	Various	Various	N/A	N/A	6,042	644	966	0	0	7,652
AT&T Government Solutions	Cost Plus	Mar 02	N/A	N/A	0	300	0	0	0	300
Boeing	Various	Various	N/A	N/A	20,990	4,680	1,180	1,030	0	27,880
Central State University	Cost Share	Jul 00	N/A	N/A	212	100	88	0	0	400
Frontier Technologies	Cost Plus	May 00	N/A	N/A	150	215	192	0	0	557
GE	Coop Agmt	Jun 99	N/A	N/A	898	0	0	0	0	898
GRC	Cost Plus	Various	N/A	N/A	2,170	300	0	0	0	2,470
Honeywell	Various	Various	N/A	N/A	900	1,790	1,500	1,500	0	5,690
Project 2865										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0708011F Industrial Preparedness				2865	
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
KBSI	Cost Share	Nov 98	N/A	N/A	2,975	375	0	0	0	3,350
Lockheed Martin	Various	Various	N/A	N/A	11,795	3,079	1,371	995	0	17,240
LSP Technologies	Cost Share	Various	N/A	N/A	5,793	1,108	1,933	0	0	8,834
Mississippi State University	Cost Share	Jul 00	N/A	N/A	150	100	0	0	0	250
MIT	Coop Agmt	Various	N/A	N/A	8,800	1,656	0	0	0	10,456
Motorola	Tech Int Agr	Mar 99	N/A	N/A	1,939	0	0	0	0	1,939
Northrop Grumman	Various	Various	N/A	N/A	17,997	7,188	4,744	2,100	0	32,029
Pratt & Whitney	Tech Int Agr	Jun 99	N/A	N/A	5,600	350	0	0	0	5,950
Raytheon	Coop Agmt	Aug 00	N/A	N/A	500	600	0	0	0	1,100
TMCI	Cost Plus	Various	N/A	N/A	875	760	0	0	0	1,635
TRW	Coop Agmt	Various	N/A	N/A	3,325	1,290	0	0	0	4,615
Univ Dayton Res Inst	Cost Plus	Apr 02	N/A	N/A	200	3,100	5,004	4,400	0	12,704
Univ Maryland	Coop Agmt	Jun 99	N/A	N/A	1,900	350	300	0	0	2,550
UTC	Various	Various	N/A	N/A	280	250	300	0	0	830
Various	Various	Various	N/A	N/A	50,005	26,834	26,803	29,371	Continuing	TBD
<u>Support and Management Organizations</u>										
In house support										
<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>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>					145,846	55,694	44,381	39,396	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					145,846	55,694	44,381	39,396	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708012F Logistic Support Activities						PROJECT 5054	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
5054 CAM Modernization	0	10,095	0	0	0	0	0	0	0	10,095	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

In FY 2003, Project 5054, Core Automated Maintenance System (CAMS) Modernization efforts were transferred from PE 0708611F, Support Systems Development, Project 4654, Integrated Maintenance Data System (IMDS), in order to modernize the CAMS system.

(U) A. Mission Description

Core Automated Maintenance System (CAMS) is the standard Air Force base-level automated maintenance information management system for managing weapon systems worldwide. The system supports aircraft, communications-electronics, and support equipment maintenance activities at worldwide operating bases, Air National Guard/AF Reserve sites, and selected NATO locations. CAMS provides on-line remote terminals connected to the Standard Base-level Computer (SBLC) system throughout the maintenance complexes. CAMS automates aircraft history, aircraft scheduling, aircrew debriefing processes, and provides a common interface for entering base-level maintenance data into other logistics management systems.

(U) FY 2002 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program
(U) \$0 No Activity
(U) \$0 Total

(U) FY 2003 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program
(U) \$8,056 CAMS Modernization
(U) \$765 Support Contractors (MCR, SenCom)
(U) \$1,274 System Program Office (SPO) Operations
(U) \$10,095 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Accomplishments/Planned Program
(U) \$0 No Activity
(U) \$0 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003																																																								
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708012F Logistic Support Activities			PROJECT 5054																																																								
<p>(U) <u>B. Budget Activity Justification</u> This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.</p>																																																															
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:55%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,375</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,375</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,375</td> <td></td> <td style="text-align: center;">10,375</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td style="text-align: center;">-178</td> <td></td> <td style="text-align: center;">-178</td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-102</td> <td></td> <td style="text-align: center;">-102</td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,095</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,095</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> In FY 2003, \$10.375 M RDT&E was transferred from PE 0708611F, project 4654, Integrated Maintenance Data System (IMDS) to fund the modernization of CAMS. The CAMS system will be replaced by IMDS in FY 2004, but modernization efforts such as database redesign and data standardization are required to bring CAMS into compliance with GCSS-AF requirements and is the baseline to be passed off to the IMDS development effort for future enhancements. IMDS funding will remain in PE 0708611F.</p>										<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	10,375	0	10,375	(U) Appropriated Value	0	10,375		10,375	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-178		-178	b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram		-102		-102	d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR					(U) Current Budget Submit/FY 2004 PBR	0	10,095	0	10,095
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																											
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(U) Other APPN																																																															
<p>(U) <u>E. Acquisition Strategy</u> All major contracts awarded after full and open competition.</p>																																																															
<p>(U) <u>F. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:45%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> </tr> </thead> <tbody> <tr> <td>Project 5054</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	Project 5054																																																		
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>																																																												
Project 5054																																																															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708012F Logistic Support Activities			PROJECT 5054		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	CAMS Modernization					0		8,056		0
(U)	Support Contractors (MCR, SenCom)					0		765		0
(U)	SPO Operations					0		1,274		0
(U)	Total					0		10,095		0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
CAMS Modernization										
Software Factory	SLA	N/A	N/A	N/A	0	0	3,688	0	0	3,688
Information Technology	BPA	Var	N/A	N/A	0	0	4,368	0	0	4,368
Services (ITS)										
<u>Support and Management Organizations</u>										
Support Contractors	Var	Var	N/A	N/A	0	0	765	0	0	765
SPO Operations	N/A	N/A	N/A	N/A	0	0	1,274	0	0	1,274
<u>Test and Evaluation Organizations</u>										
Not Applicable.										
(U) Government Furnished Property:										
<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>										
Not Applicable.										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development		0708012F Logistic Support Activities			5054		
<p>(U) <u>Government Furnished Property Continued:</u> <u>Support and Management Property</u> Not Applicable. <u>Test and Evaluation Property</u> Not Applicable.</p>							
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	
						<u>Total</u>	
	<u>Subtotals</u>					<u>Program</u>	
	Subtotal Product Development	0	0	8,056	0	0	8,056
	Subtotal Support and Management	0	0	2,039	0	0	2,039
	Subtotal Test and Evaluation						
	Total Project	0	0	10,095	0	0	10,095

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program					PROJECT 2146
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COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2146	PRAM	27,124	9,512	0	0	0	0	0	0	0	51,827
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: Program funding was reduced after FY 2002 due to higher priority Air Force requirements.

(U) A. Mission Description

This program emphasizes the rapid incorporation of reliability and maintainability (R&M) technology 'fixes' that will improve the operational capability of weapon systems and equipment at a significantly lower cost. Productivity, Reliability, Availability, Maintainability (PRAM) accomplishes this by utilizing existing off-the-shelf and emerging technologies and adapting them to specific Air Force and joint-Service weapon systems and processes to solve near-term deficiencies. It relies on Major Command and field support to implement the adapted-technology when the initial investment is complete. PRAM is a key tool for reducing the total ownership cost of fielded systems and supporting infrastructure. Average project length is twenty-seven months. PRAM currently provides services to all three Air Force Materiel Command centers: Aeronautical Systems Center; Electronic Systems Center; and Air Armament Center; as well as all Air Logistics Centers. PRAM also provides service to the Air Force Space Command Space and Missile Systems Center. Note: In FY 2003, Congress added \$2.8M for Modeling/ Re-engineering for Oklahoma City Air Logistics Center and \$2.1M for Aircraft Turbine Engine Sustainment.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$2,552 Completed the existing PRAM projects that are designed to reduce total ownership cost of Air Force aging aircraft such as: overcoming parts obsolescence in test equipment for electronic warfare systems; prototyping coatings and lubricants to prevent corrosion on support equipment and electrical terminals; and developing life support equipment and more efficient means of publishing technical data.
- (U) \$9,905 Continued airframe, subsystem, and space R&M efforts that reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness. These efforts will be focused on reducing overall Air Force operations and support (O&S) costs.
- (U) \$4,389 Continued existing aging aircraft efforts to reduce overall Air Force O&S costs and increase aircraft availability, reliability, while maintaining operational capability and reducing mobility footprint.
- (U) \$2,139 Continued the existing efforts to address reduced O&S costs within the air armaments enterprise. Continued development of a non-destructive test protocol that duplicates actual flight conditions for precision-guided munitions and cruise missiles.
- (U) \$2,178 Developed and completed efforts associated with Inspection Technology for Turbine Engines such as the development of an automated

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0708026F Productivity, Reliability, Availability, Maintainability Program	2146
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
	ultrasonic inspection system to detect embedded flaws in turbine engine components.	
(U) \$2,000	Develop and implement Engine Blade Tip Repair Technology.	
(U) \$3,961	Developed and completed efforts associated with Automated Non-destructive Inspection Technology for Turbine Engine Sustainment such as the development of probability of detection reliability specimens to validate automated ultrasonic inspection system performance.	
(U) \$27,124	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$1,774	Complete previous year subsystem Productivity, Reliability, Availability and Maintainability (PRAM) projects to reduce total ownership costs of Air Force systems such as: combining the attributes of three types of support equipment; transitioning commercial-off-the-shelf equipment to the F-16 aircraft; developing a powder coating technique that is applicable to various systems; and transitioning new materials that present an improved strength-to-weight ratio resulting in greater payloads for both space and aircraft missions.	
(U) \$1,311	Continue airframe, subsystem, life support, and space reliability and maintainability (R&M) efforts that reduce operations and support (O&S) costs by reducing the overall maintenance burden, improving capabilities, reliability, and mission readiness.	
(U) \$870	Continue existing aero support equipment efforts to reduce Air Force O&S costs. Expand the current base infrastructure R&M tracking method for contingency data associated with system usage/configuration, premature failures, cost, and supply. Continue development of improved efficiency air compressor.	
(U) \$862	Complete the existing space and missile systems reliability efforts to reduce Air Force O&S costs within the air armaments enterprise. Complete development of a non-destructive test protocol that duplicates actual flight conditions for precision-guided munitions and cruise missiles. Transition technology to improve R&M of munitions handling systems.	
(U) \$2,012	Develop and complete Aircraft Turbine Engine Sustainment.	
(U) \$2,683	Develop and complete efforts associated with Modeling/Re-engineering for Oklahoma City Air Logistics Center.	
(U) \$9,512	Total	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Program	
(U) \$0	No Activity	
(U) \$0	Total	
Project 2146	Page 2 of 6 Pages	Exhibit R-2 (PE 0708026F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program			PROJECT 2146				
(U) <u>B. Budget Activity Justification</u>											
This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use.											
(U) <u>C. Program Change Summary (\$ in Thousands)</u>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>						
(U)	Previous President's Budget	26,623	4,767	7,409							
(U)	Appropriated Value	26,889	9,667								
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions	-266	-102								
	b. Small Business Innovative Research	-910									
	c. Omnibus or Other Above Threshold Reprogram	2,000	-53								
	d. Below Threshold Reprogram	-457									
	e. Rescissions	-132									
(U)	Adjustments to Budget Years Since FY 2003 PBR			-7,409							
(U)	Current Budget Submit/FY 2004 PBR	27,124	9,512	0	51,827						
(U) <u>Significant Program Changes:</u>											
Program funding was reduced due to higher priority Air Force requirements.											
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Related Activities:										
(U)	PE 0605011F, RDT&E for Aging Aircraft.										
(U) <u>E. Acquisition Strategy</u>											
All projects within this Program Element are awarded competitively, either by full and open competition, or by amending task order contracts with competition for subcontracts.											
Project 2146			Page 3 of 6 Pages			Exhibit R-2 (PE 0708026F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program	PROJECT 2146
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(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Blade Repair Contract Award			X									
(U) Request For Proposal Release		*	X			X						
(U) Contract Awards	*	*	*		X	X	X					

* = completed, X = planned

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0708026F Productivity, Reliability, Availability, Maintainability Program			2146		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Subsystem Reliability and Maintainability (R&M)				2,552		1,774			
(U)	Airframe R&M				9,905		1,311			
(U)	Aero Support Equipment and Base Infrastructure R&M				4,389		870			
(U)	Space and Missile Systems Reliability				2,139		862			
(U)	Blade Tip Repair Project (reprogrammed from PE 0207601F)				2,000		0			
(U)	Non-destructive Inspection Technology for Engine Sustainment				3,961		0			
(U)	Inspection Technology for Turbine Engine				2,178		0			
(U)	Aircraft Turbine Engine Sustainment				0		2,012			
(U)	Modeling/Re-Engineering for Oklahoma City Air Logistics Ctr				0		2,683			
(U)	Total				27,124		9,512			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Numerous	Various	Various	N/A	N/A	3,028	19,250	1,900		0	24,178
General Atomics	Various	Various	N/A	N/A	9,903	1,100	2,100		0	13,103
Lockheed Martin	Various	Various	N/A	N/A	510	1,500			0	2,010
ARINC	T&M	Feb 01	N/A	N/A	1,750	0			0	1,750
Battelle	T&M	Feb 01	N/A	N/A	0	150			0	150
Lockheed Sanders	T&M	Mar 01	N/A	N/A	0	550			0	550
Southwest Research	T&M	Various	N/A	N/A	0	2,339	828		0	3,167
CACI	T&M	TBD	N/A	N/A	0	400	200		0	600
NCI Information Systems	T&M	Various	N/A	N/A	0	1,108	936		0	2,044
Project 2146					Page 5 of 6 Pages			Exhibit R-3 (PE 0708026F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0708026F Productivity, Reliability, Availability, Maintainability Program				2146	
(U) <u>Performing Organizations Continued:</u>									
<u>Product Development Organizations</u>									
Survival Equipment Inc.	TBD	TBD	N/A	N/A	0	450	300	0	750
SAIC	TBD		N/A	N/A	0	277	448	0	725
<u>Support and Management Organizations</u>									
UDRI	TDB	Various	N/A	N/A	0	0	2,800		2,800
In-house support									
<u>Test and Evaluation Organizations</u>									
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development					15,191	27,124	6,712		0
Subtotal Support and Management					0	0	2,800		
Subtotal Test and Evaluation									
Total Project					15,191	27,124	9,512		0
					<u>Total</u>				<u>Program</u>
									49,027
									2,800
									51,827

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	31,977	42,408	54,034	50,369	48,780	49,521	50,233	50,905	Continuing	TBD
3318 Product Data Systems Modernization (PDSM)	2,640	4,493	8,164	5,537	3,396	3,382	3,431	3,476	Continuing	TBD
4654 Integrated Maintenance Data System (IMDS)	24,337	18,793	26,136	24,650	25,008	25,401	25,766	26,111	Continuing	TBD
4926 Reengineering and Enabling Technologies	5,000	0	0	0	0	0	0	0	Continuing	TBD
5042 Log Application Logisitics Integration (LALI)	0	7,133	7,135	7,135	7,204	7,333	7,438	7,538	Continuing	TBD
5044 Log Application ILS-S (LAILS-S)	0	11,989	12,599	13,047	13,172	13,405	13,598	13,780	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>In FY 2002, Congress added an additional \$5.0 million RDT&E funds to SSD (in the IMDS project 4654) for: Center for Aircraft and Systems Support (CASS) (\$3.0 million), Commodity Management Systems Consolidation (CMSC) (\$1.0 million), and Battlespace Logistics Readiness and Sustainment (BLRS) (\$1.0 million). The Air Force transferred these amounts to the correct programs.</p> <p>In FY 2003, Project 5044, Log Application ILS-S (LAILS-S) and Project 5042, Log Application Logistics Integration (LALI), efforts were transferred from PE 0303141F, Global Combat Support System - Air Force (GCSS-AF), Project 4655, Integrated Logistics System - Supply (ILS-S) and Project 4904, Logistics Integration, in order to align functional application development efforts into separate functional PE's. This realignment was done to provide logical program groupings and to enhance program oversight. Neither program requirements nor program management were impacted by this restructure.</p> <p>In FY 2003, Congress added an additional \$7.7 million RDT&E funds to SSD (in the IMDS project 4654) for CASS (\$3.0 million), Aging Aircraft Data Environment for C-5 and C-17 (\$1.5 million), CMSC (\$1.7 million), and Low Emission/Efficient Hybrid Aviation Refueling Truck Propulsion (\$1.5 million). The Air Force is working to transfer these amounts to the correct programs.</p>										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0708611F Support Systems Development**(U) A. Mission Description**

This program element supports five separate programs. PDSM (project 3318) updates Air Force digital data standards to commercial industry standards supporting the Joint Computer Aided Acquisition and Logistics System (JCALS) concept. IMDS (project 4654) develops and fields an Air Force standard maintenance information system to integrate information systems supporting Air Force maintenance activities into a single open architecture, modern decision support system that is compatible with the Global Combat Support System - Air Force (GCSS-AF) architecture. This enhanced decision support system will increase operational production capability and support system efficiency, while decreasing mobility infrastructure requirements and cost of operations. Reengineering and Enabling Technologies (RET) (project 4926) provides for continuing analytical research and studies in reengineering and enabling technologies. LAILS-S, (project 5044), will modernize the existing legacy Standard Base Supply System (SBSS). LALI, (project 5042), is the effort to migrate existing IL legacy systems to the common GCSS-AF Integration Framework.

(U) B. Budget Activity Justification

This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	29,937	35,813	55,547	TBD
(U) Appropriated Value	29,221	43,513		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-277	-751		
b. Small Business Innovative Research	-1,002			
c. Omnibus or Other Above Threshold Reprogram		-354		
d. Below Threshold Reprogram	4,191			
e. Rescissions	-156			
(U) Adjustments to Budget Years Since FY 2003 PBR			-1,513	
(U) Current Budget Submit/FY 2004 PBR	31,977	42,408	54,034	TBD

(U) Significant Program Changes:

In FY 2002, Congress added an additional \$5.0 Million to SSD (in the IMDS project 4654) for: Center for Aircraft and Systems Support (CASS) (\$3.0 Million), Commodity Management Systems Consolidation (CMSC) (\$1.0 Million), and Battlespace Logistics Readiness and Sustainment (BLRS) (\$1.0 Million). The Air Force transferred these amounts to the correct programs.

In FY 2003, Congress added an additional \$7.7 million RDT&E funds to SSD (in the IMDS project 4654) for: CASS (\$3.0 million), Aging Aircraft Data Environment for C-5 and C-17 (\$1.5 million), CMSC (\$1.7 million), and Low Emission/Efficient Hybrid Aviation Refueling Truck Propulsion (\$1.5 million).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development						PROJECT 3318	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3318	Product Data Systems Modernization (PDSM)	2,640	4,493	8,164	5,537	3,396	3,382	3,431	3,476	Continuing	TBD

(U) A. Mission Description

This project implements the Air Force Technical Order (TO) Functionality and the final Air Force portion of the Joint Computer-Aided Acquisition and Logistics Support (JCALS) system. The Automated Civil Engineering System (ACES) is the modernization of the Interim Work Information Management System (IWIMS) legacy system that supports Civil Engineering Management Information System requirements. In FY 2003, a TO Transformation Office called the AF Technical Data System Program Office, was set up to act as repository to manage digitization of tech order data and integration with AF TO Infrastructure activities.

This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$425 Continue to manage AF technical data activities
- (U) \$32 Continue to Sustain the Joint Engineering Data Management and Information Control System (JEDMICS)
- (U) \$321 Continue to develop and maintain digital templates for new acquisition technical orders
- (U) \$430 Continue to plan/participate in JCALS to ensure AF requirements are met
- (U) \$574 Continue to activate AF JCALS sites to ensure timely and accurate data is available and useable
- (U) \$102 Continue to test digital data specifications/standards and represent AF at standards activities
- (U) \$351 Continue to provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMs
- (U) \$405 Automated Civil Engineer System (ACES)
- (U) \$2,640 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$933 Continue to manage AF technical data activities
- (U) \$33 Continue to sustain JEDMICS
- (U) \$326 Continue to develop and maintain digital templates for new acquisition technical orders
- (U) \$437 Continue to plan/participate in JCALS to ensure AF requirements are met
- (U) \$288 Deploy JCALS 3.1.2 to existing AF JCALS sites

Project 3318

Page 3 of 24 Pages

Exhibit R-2A (PE 0708611F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development				0708611F Support Systems Development			3318			
(U) <u>A. Mission Description Continued</u>										
(U) <u>FY 2003 (\$ in Thousands) Continued</u>										
(U)	\$104	Continue to test digital data specifications/standards and represent AF at standards activities								
(U)	\$315	Continue to provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMs								
(U)	\$483	Continue Automated Civil Engineer Systems (ACES)								
(U)	\$1,574	AF Tech Data Enterprise Integration/Development/Modernization								
(U)	\$4,493	Total								
(U) <u>FY 2004 (\$ in Thousands)</u>										
(U)	\$0	Accomplishments/Planned Program								
(U)	\$491	Continue Automated Civil Engineer System (ACES)								
(U)	\$1,600	Continue to Manage TO Architecture Integration								
(U)	\$3,350	Continue Integrator/Developer								
(U)	\$600	Continue Pilot Infrastructure								
(U)	\$800	Continue Software Training								
(U)	\$1,000	Continue Integration with TM systems/Integration/Migration								
(U)	\$323	Continue to Support and Sustain Tech Data Integration Lab								
(U)	\$8,164	Total								
(U) <u>B. Project Change Summary</u>										
Not Applicable.										
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
(U) <u>D. Acquisition Strategy</u>										
All major contracts awarded after full and open competition.										
Project 3318			Page 4 of 24 Pages			Exhibit R-2A (PE 0708611F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT		
07 - Operational System Development					0708611F Support Systems Development						3318		
(U) E. Schedule Profile													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) ACES													
(U) Completed ACES Housing Module Development	*												
(U) Completed ACES Facilities Management			*										
(U) Completed ACES Fire Dept Module Development		*											
(U) Completed ACES Single Logical Data Model				*									
(U) Completed ACES Readiness/Personnel Modules Development				*									
(U) ACES Explosive Ordinance Disposal						X							
(U) ACES Environmental Flight Module								X					
(U) ACES Operations													X
(U) TO Architecture Integration													
(U) Deliver Draft Capstone C4ISP								X					
(U) Complete Operational Architecture Business Model						X							
(U) Develop Integration Strategy							X						
(U) Perform Hardware Trade-Off Analysis									X				
(U) Develop Training Strategy									X				
(U) Develop TO Help Desk and Users Guide									X				
(U) Identify Hardware Acquisition Vehicle							X						
(U) Baseline C4ISP										X			
(U) Begin Detailed Systems Architecture						X							
(U) Develop Integration Plan							X						
(U) Deployment Strategy										X			
(U) Deployment										X			
(U) Training								X					
* denotes completed event													
X denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0708611F Support Systems Development			3318		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			
(U)	Manage AF technical data activities				425	933	0			
(U)	Plan/participate/activate JEDMICS sites				32	33	0			
(U)	Test digital data specifications/standards and represent AF at standards activities				102	104	0			
(U)	Develop and maintain digital data templates for new acquisition technical orders				321	326	0			
(U)	Plan/participate in JCALS to ensure AF requirements and schedules are met				430	437	0			
(U)	Activate AF JCALS sites to ensure timely and accurate data is available and useable				574	288	0			
(U)	Provide direct support to weapon systems, Logistics and Product Centers, and Major Commands (MAJCOMS)				351	315	0			
(U)	Automated Civil Engineer System (ACES)				405	483	491			
(U)	Tech Order (TO) Architecture Integration				0	1,574	0			
(U)	Manage TO Architecture Integration				0	0	1,600			
(U)	Integrator/Developer				0	0	3,350			
(U)	Pilot Infrastructure				0	0	600			
(U)	Software Training				0	0	800			
(U)	Integration with TM systems/Integration/Migration				0	0	1,000			
(U)	Support and Sustain Tech Data Integration Lab				0	0	323			
(U)	Total				2,640	4,493	8,164			
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Software Factory (ACES)	N/A	N/A	N/A	N/A	0	405	483	491	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0708611F Support Systems Development					3318
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
RJO	ECRC	Var	N/A	N/A	7,767	0	0	0	0	7,767
MTC (formerly RJO)	GSA	Var	N/A	N/A	1,551	2,235	1,200	1,000	Continuing	TBD
LOGTEC	GSA	Var	N/A	N/A	12,149	0	600	1,000	Continuing	TBD
BTAS	GSA	Var	N/A	N/A	491	0	815	1,000	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	736	0	472	405	Continuing	TBD
TO Architecture Contractors (TBD)							923	4,268	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Not Applicable.										
(U) Government Furnished Property:										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable.										
<u>Support and Management Property</u>										
Not Applicable.										
<u>Test and Evaluation Property</u>										
Not Applicable.										
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					0	405	483	491	TBD	TBD
Subtotal Support and Management					22,694	2,235	4,010	7,673	TBD	TBD
Subtotal Test and Evaluation										
Total Project					22,694	2,640	4,493	8,164	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development						PROJECT 4654		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4654	Integrated Maintenance Data System (IMDS)		24,337	18,793	26,136	24,650	25,008	25,401	25,766	26,111	Continuing	TBD

In FY 2002, Congress added an additional \$5.0 million RDT&E funds to SSD (in the IMDS project 4654) for: Center for Aircraft and Systems Support (CASS) (\$3.0 million), Commodity Management Systems Consolidation (CMSC) (\$1.0 million), and Battlespace Logistics Readiness and Sustainment (BLRS) (\$1.0 million). The Air Force transferred these amounts to the correct programs.

In FY 2003, Project 4654, Integrated Maintenance Data Systems efforts transferred \$10.375 million to PE 0708012F, Logistics Support Activities, in order to provide funding to modernize Project 5054, Core Automated Maintenance Systems (CAMS).

In FY 2003, Congress added an additional \$7.7 million RDT&E funds to SSD (in the IMDS project 4654) for CASS (\$3.0 million), Aging Aircraft Data Environment for C-5 and C-17 (\$1.5 million), CMSC (\$1.7 million), and Low Emission/Efficient Hybrid Aviation Refueling Truck Propulsion (\$1.5 million).

(U) A. Mission Description

The Integrated Maintenance Data System (IMDS) is an information technology program to provide maintenance personnel with all maintenance information under one system. It will have distributed databases, which will link designated existing legacy systems until their eventual transition to full operation under IMDS, as well as providing an integrated tool for interfacing with certain other legacy systems that will be sustained for the foreseeable future. It will display electronic technical manuals, provide easy-to-use data entry, record maintenance actions, and link all external data sources (maintainer, supervisor, warehouse and supply).

This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.

(U) FY 2002 (\$ in Thousands)

(U)	\$0	Accomplishments/Planned Program
(U)	\$13,438	IMDS System
(U)	\$3,206	Support Contractors (MITRE, MCR, SenCom)
(U)	\$3,901	SPO Operations.
(U)	\$2,826	Center for Aircraft and Systems Support (CASS)
(U)	\$966	Battlespace Logistics Readiness and Sustainment (BLRS)
(U)	\$24,337	Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development	PROJECT 4654
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$7,841	IMDS System
(U) \$1,428	Support Contractors (MITRE, MCR, SenCom)
(U) \$1,824	SPO Operations
(U) \$1,500	Hybrid Aviation Refueling Truck Propulsion
(U) \$3,000	Center for Aircraft System/Support Infrastructure
(U) \$1,500	Aging Aircraft
(U) \$1,700	Commodity Management System Consolidation
(U) \$18,793	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$18,356	IMDS System
(U) \$3,915	Support Contractors (MITRE, MCR, SenCom)
(U) \$3,865	SPO Operations
(U) \$26,136	Total

(U) **B. Project Change Summary**

Not Applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Other Procurement AF, IMDS (PE 0708611F).	2,612	2,570	2,630	2,675	2,662	2,696	2,747	2,799	Continuing	Continuing
(U) Operations & Maintenance AF, IMDS (PE 0708611F)	1,855	1,828	2,010	1,978	2,090	2,126	2,167	2,209	Continuing	Continuing

Project 4654

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Exhibit R-2A (PE 0708611F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003																																																																																																																					
BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT																																																																																																																					
07 - Operational System Development					0708611F Support Systems Development						4654																																																																																																																					
<p>(U) <u>D. Acquisition Strategy</u> All major contracts awarded after full and open competition.</p> <p>(U) <u>E. Schedule Profile</u></p> <table border="0"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</u></th> <th colspan="4"><u>FY 2004</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) CAMS GUI</td> <td></td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin qtrly Legacy Systems Review to Develop IMDS Functional Baseline</td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Legacy Sys Review to Develop IMDS FB (REMIS, CEMS, RAMPOD)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Tool Accountability System (TAS Phase III & IV)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td>X</td> </tr> <tr> <td>(U) Enhanced Maintenance Operations Center (EMOC Phase III & IV)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td>X</td> </tr> <tr> <td>(U) IMDS Integrator Developer (Phase I Training)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) IMDS Integrator Developer (Phase II)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* denotes completed event X denotes planned event</p>													<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) CAMS GUI		*											(U) Begin qtrly Legacy Systems Review to Develop IMDS Functional Baseline					*								(U) Legacy Sys Review to Develop IMDS FB (REMIS, CEMS, RAMPOD)									X				(U) Tool Accountability System (TAS Phase III & IV)										X		X	(U) Enhanced Maintenance Operations Center (EMOC Phase III & IV)										X		X	(U) IMDS Integrator Developer (Phase I Training)						X							(U) IMDS Integrator Developer (Phase II)									X			
	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>																																																																																																																							
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																																				
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Project 4654				Page 10 of 24 Pages				Exhibit R-2A (PE 0708611F)																																																																																																																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 4654			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	IMDS System					13,438		7,841		18,356	
(U)	Support Contractors (MITRE, MCR, SenCom)					3,206		1,428		3,915	
(U)	SPO Operations					3,901		1,824		3,865	
(U)	Center for Aircraft Systems and Support (CASS)					2,826		0		0	
(U)	Battle Space Logistics Readiness and Sustainment (BLRS)					966		0		0	
(U)	Hybrid Aviation Refueling Truck Propulsion					0		1,500		0	
(U)	Center for Aircraft System/Support Infrastructure					0		3,000		0	
(U)	Aging Aircraft					0		1,500		0	
(U)	Commodity Management System Consolidation					0		1,700		0	
(U)	Total					24,337		18,793		26,136	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or</u>	<u>Contract</u>									
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	
	<u>Product Development Organizations</u>									<u>Total</u>	
	Andersen Consulting	CPAF	19 Jul 96	N/A	N/A	57,274	0	0	0	0	57,274
	IMDS System									Continuing	TBD
	Software Factory	SLA	N/A	N/A	N/A	2,216	1,565	0	182	Continuing	TBD
	LMSI-O	CPAF	19-Apr-01	N/A	N/A	0	1,894	0	0	Continuing	TBD
	TSRI	CR/FFP	23 Oct 01	N/A	N/A	492	0	0	0	Continuing	TBD
	SEI	CR	20 Jun 01	N/A	N/A	700	0	0	0	Continuing	TBD
	EDW	Varies	Varies	N/A	N/A	0	3,270	3,000	50	Continuing	TBD
	Portal	Varies	Varies	N/A	N/A	2,285	0	0	400	Continuing	TBD
	Development Contracts (Information Technology)	Varies	Varies			0	6,709	4,841	17,724	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0708611F Support Systems Development					4654
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
Services (ITS))										
CASS	TBD	TBD	N/A	N/A	0	2,826	0	0	0	2,826
BLRS	TBD	TBD	N/A	N/A	0	966	0	0	0	966
HARTP	TBD	TBD	N/A	N/A	0	0	1,500	0		1,500
CASS Infrastructure	TBD	TBD	N/A	N/A	0	0	3,000	0		3,000
Aging Aircraft	TBD	TBD	N/A	N/A	0	0	1,500	0		1,500
CMSC	TBD	TBD	N/A	N/A	0	0	1,700	0	0	1,700
<u>Support and Management Organizations</u>										
Support Contractors	Var	Var	N/A	N/A	10,058	3,206	1,428	3,915	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	5,818	3,901	1,824	3,865	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
IMDS System	TBD	TBD	N/A	N/A	0	0	0	0	Continuing	TBD
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					62,967	17,230	15,541	18,356	TBD	TBD
Subtotal Support and Management					15,876	7,107	3,252	7,780	TBD	TBD
Subtotal Test and Evaluation					0	0	0	0	TBD	TBD
Total Project					78,843	24,337	18,793	26,136	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 4926		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4926	Reengineering and Enabling Technologies		5,000	0	0	0	0	0	0	0	Continuing	TBD
<p>(U) <u>A. Mission Description</u></p> <p>This program provides for continuing analytical research and studies in reengineering and enabling technologies. It provides quick response assistance for senior Air Force officials and others in the Business Process Reengineering (BPR) and change management arenas. Using reengineering processes and enabling technologies, existing processes and their associated activities can be analyzed to identify work that is value added, non-value added, and wasted. It will assist senior leaders with removing duplication of effort, unnecessary product generation delays and non-productive activities and provide significant improvements in product quality.</p> <p>The Air Force Acquisition community is pursuing excellence through business process redesign and the associated enabling technologies. This program provides for developing a center of excellence in BPR and for mentoring Headquarters Air Force (HAF) leaders in the proper application of BPR principles for their initiatives. It will maintain information on the state of the art in BPR paradigms and tailor their application for the HAF and SAF/AQ environment. It will also capture lessons learned and other feedback from BPR applications for change management and process improvement strategies.</p> <p>This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$1,508 Business Process Reengineering (BPR) and Change Management Research</p> <p>(U) \$2,300 Senior Leadership Quick Response Studies</p> <p>(U) \$1,192 Data Management Tools and Associated Activities</p> <p>(U) \$5,000 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p>												
Project 4926			Page 13 of 24 Pages					Exhibit R-2A (PE 0708611F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708611F Support Systems Development	PROJECT 4926
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(U) **A. Mission Description Continued**

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$0 No Activity
- (U) \$0 Total

(U) **B. Project Change Summary**

Not Applicable.

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

	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	

- (U) AF RDT&E
- (U) Other APPN

(U) **D. Acquisition Strategy**

All major contracts awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Business Process Reengineering (BPR) and Change Management Research				*								
(U) Senior Leadership Quick Response Studies				*								
(U) Data Management Tools and Associated Activities				*								

* denotes completed event
X denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0708611F Support Systems Development			4926		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Business Process Reengineering (BPR) and Change Management Research					1,508		0		0
(U)	Senior Leader Quick Response Studies					2,300		0		0
(U)	Data Management Tools and Associated Activities					1,192		0		0
(U)	Total					5,000		0		0
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
DSD Labs	GSA	TBD	N/A	N/A	0	5,000	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
Not Applicable.										
<u>Test and Evaluation Organizations</u>										
Not Applicable.										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	5,000	0	0	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	5,000	0	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 5042		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5042	Log Application Logisitics Integration (LALI)		0	7,133	7,135	7,135	7,204	7,333	7,438	7,538	Continuing	TBD
<p>In FY 2003, PE 0708611F, Support Systems Development, project 5042, Log Application Logistics Integration (LALI) efforts were transferred from PE 0303141F, Global Command Support System (GCSS), project 4904, Logistics Integration in order to align functional application development efforts into separate functional PE's. This is an accounting change only and was done to provide logical project grouping and allow for more effective oversight of these projects. Neither project requirements, nor project management were impacted by this restructure.</p> <p>(U) <u>A. Mission Description</u> Log Application Logistics Integration is the effort to migrate existing IL legacy systems to the common GCSS-AF Integration Framework. The target is a suite of software components that are continuously updated or refined to embrace emerging best practices and commercial information technology innovations. The strategic plan is the creation of a logistics enterprise system using common software and hardware products requiring a smaller number of interfacing transactions.</p> <p>This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapons systems.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$1,629 Program Management Office (PMO) Support (U) \$336 PMO Task (U) \$334 Base Support (U) \$4,703 Support Contractors (U) \$131 Integration Task Contracts (U) \$7,133 Total</p>												
Project 5042			Page 16 of 24 Pages					Exhibit R-2A (PE 0708611F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 5042	
(U) A. Mission Description Continued											
(U) FY 2004 (\$ in Thousands)											
(U)	\$0	Accomplishments/Planned Program									
(U)	\$1,656	Program Management Office (PMO) Support									
(U)	\$336	PMO Task									
(U)	\$334	Base Support									
(U)	\$4,703	Support Contractors									
(U)	\$106	Integration Task Contracts									
(U)	\$7,135	Total									
(U) B. Project Change Summary											
Not Applicable.											
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E										
(U)	Other APPN										
(U) D. Acquisition Strategy											
All major contracts awarded after full and open competition.											
(U) E. Schedule Profile											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U)	Deployable Laptop (9iAS)							*			
(U)	Metadata Repository (Automate/Updates)							*			X
(U)	Program Handbooks								X		X
(U)	Architecture Plan (IDW Preliminary Architecture)						X				
(U)	Logistics Data Interface Transition Plan								X		
(U)	Operational Safety, Suitability, and Effectiveness Plan								X		
	* - Completed Event										
Project 5042				Page 17 of 24 Pages				Exhibit R-2A (PE 0708611F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003						
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT						
07 - Operational System Development					0708611F Support Systems Development					5042						
(U) E. Schedule Profile Continued																
					<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
					1	2	3	4	1	2	3	4	1	2	3	4
X - Planned Event																
Project 5042					Page 18 of 24 Pages					Exhibit R-2A (PE 0708611F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 5042		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Program Management Office (PMO) Support					0		1,629		1,656
(U)	PMO Task					0		336		336
(U)	Base Support					0		334		334
(U)	Support Contractors					0		4,703		4,703
(U)	Integration Task Contracts					0		131		106
(U)	Total					0		7,133		7,135
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Greentree	BPA	Varies	N/A	N/A	0	0	629	629	Continuing	TBD
Oracle	BPA	Varies	N/A	N/A	0	0	923	923	Continuing	TBD
SSG Software Factory	SLA Annex	1 Oct	N/A	N/A	0	0	39	39	Continuing	TBD
MITRE	FFRDC	1 Oct	N/A	N/A	0	0	573	573	Continuing	TBD
Task Contractors	Varies	Varies	N/A	N/A	0	0	76	76	Continuing	TBD
PMO Tasks	N/A	1 Oct	N/A	N/A	0	0	336	336	Continuing	TBD
<u>Support and Management Organizations</u>										
PMO Support	N/A	1 Oct	N/A	N/A	0	0	1,450	1,477	Continuing	TBD
Base Support	N/A	1 Oct	N/A	N/A	0	0	334	334	Continuing	TBD
Support Contractors	Varies	Varies	N/A	N/A	0	0	1,157	1,132	Continuing	TBD
MITRE	FFRDC	1 Oct	N/A	N/A	0	0	573	573	Continuing	TBD

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development					0708611F Support Systems Development				5042		
(U) Performing Organizations Continued:											
<u>Test and Evaluation Organizations</u>											
PMO Support	N/A	1 Oct	N/A	N/A	0	0	179	179	Continuing	TBD	
MITRE	FFRDC	30 Sept	N/A	N/A	0	0	573	573	Continuing	TBD	
TBD	BPA	1 Feb	N/A	N/A	0	0	291	291	Continuing	TBD	
					<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					0	0	2,576	2,576	TBD	TBD	
Subtotal Support and Management					0	0	3,514	3,516	TBD	TBD	
Subtotal Test and Evaluation					0	0	1,043	1,043	TBD	TBD	
Total Project					0	0	7,133	7,135	TBD	TBD	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 5044		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5044	Log Application ILS-S (LAALS-S)	0	11,989	12,599	13,047	13,172	13,405	13,598	13,780	Continuing	TBD
<p>In FY 2003, Project 5044, Log Application Integrated Logistics System - Supply (LAALS-S), efforts were transferred from PE 0303141F, Global Combat Support System (GCSS), Project 4655, Integrated Logistics System-Supply (ILS-S), in order to align functional application development efforts into separate functional PE's. This realignment was done to provide logical project grouping and to enhance program oversight. Neither project management were impacted by this restructure.</p> <p>(U) <u>A. Mission Description</u> The primary focus of the Log Application Integrated Logistics System - Supply (LAALS-S) is the modernization of the Standard Base Supply System (SBSS) to seamlessly integrate with other logistics systems--to provide total asset visibility, facilitate regionalization, and enable the war fighter to control, order, receive, and exploit materiel in a cheaper and more efficient manner.</p> <p>This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$9,002 Continue Component Development (U) \$1,100 Continue Logistics Business Area Integration (U) \$406 Continue Acquisition & Integration Support (Logistics Requirements Analysis) (U) \$1,481 Continue SPO Operations (Labor, Management Support) (U) \$11,989 Total</p>											
Project 5044			Page 21 of 24 Pages				Exhibit R-2A (PE 0708611F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
07 - Operational System Development					0708611F Support Systems Development					5044			
(U) <u>A. Mission Description Continued</u>													
(U) <u>FY 2004 (\$ in Thousands)</u>													
(U) \$0 Accomplishments/Planned Program													
(U) \$7,897 Component Development													
(U) \$925 Logistics Business Area Integration													
(U) \$445 Acquisition & Integration Support (Logistics Requirements Analysis)													
(U) \$1,800 SPO Operations (Labor, Management Support)													
(U) \$1,532 Supply Modernization													
(U) \$12,599 Total													
(U) <u>B. Project Change Summary</u>													
Not Applicable.													
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</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>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete				
(U) AF RDT&E													
(U) Other APPN													
(U) <u>D. Acquisition Strategy</u>													
All major contracts awarded after full and open competition.													
(U) <u>E. Schedule Profile</u>													
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Supply Modernization													
(U) --Release 2						*							
(U) --Release 3									X				
(U) --Release 4													X
(U) Component Development (Ongoing from BPAC 674655)													
(U) Software Release to support RIT Initiative									X				
(U) New Mission Capable Asset Sourcing System (MASS)										X			
Project 5044													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0708611F Support Systems Development			5044		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Supply Modernization					0		0		1,532
(U)	Logistics Business Area Integration					0		1,100		925
(U)	Acquisition & Integration Support (Logistics Requirements Analysis)					0		406		445
(U)	SPO Operations (Labor, Management Support)					0		1,481		1,800
(U)	Component Development					0		9,002		7,897
(U)	Total					0		11,989		12,599
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin	IDIQ	15 Aug 95	N/A	N/A	0	0	1,100	925	Continuing	TBD
SSG/SW (Software Factory)	SLA	1 Oct	N/A	N/A	0	0	0	1,532	Continuing	TBD
Keane Federal System (Component Developer)	IDIQ	3 Aug 01	N/A	N/A	0	0	9,002	7,897	Continuing	TBD
<u>Support and Management Organizations</u>										
Support Contractors	Various	Various	N/A	N/A	0	0	406	445	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	0	0	1,481	1,800	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	0	10,102	10,354	TBD	TBD
Subtotal Support and Management					0	0	1,887	2,245	TBD	TBD
Subtotal Test and Evaluation										
Total Project					0	0	11,989	12,599	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program	PROJECT 4851
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4851 Embedded Comp Res Spt Prog Impr	2,276	2,049	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: Program terminated to meet higher AF priorities.

(U) A. Mission Description

This crosscutting program improves the support of mission-critical software intensive systems for numerous Air Force weapon systems. It validates, matures and supports the rapid transition of emerging software technologies to improve the capabilities of AF weapon systems in response to changing mission or changing threat requirements. This program also develops and transitions effective technologies to organizations in order to enhance their ability to develop, acquire, manage, and sustain mission critical software. This program is in Budget Activity 7, Operational System Development, because it provides support to operational systems.

(U) FY 2002 (\$ in Thousands)

- (U) \$0** Accomplishment/Planned Program
- (U) \$566** Continued developing technologies and methodologies to incrementally upgrade legacy systems to support their cost-effective employment and sustainment. Demonstrated, in designated aircraft, the processes and tools for wrapping embedded software, real-time object request broker technology, and emulation technology into fielded weapon systems. Transitioned these technologies to fighter and cargo aircraft.
- (U) \$80** Continued supporting the development of the Real-Time Defense Information Infrastructure Common Operating Environment. Continued developing and testing technologies to improve the effectiveness of systems performing real-time command and control (C2) missions. Evaluated the effectiveness of these approaches in implementing a seamless information exchange between the different platforms operating in the battlespace.
- (U) \$334** Continued the development of Assured Middleware for Real-Time Embedded Systems (AMRES). Completed the design of the AMRES environment using commercial-off-the-shelf components and the Real-Time Common Object Request Broker Architecture to integrate all components. Matured and demonstrated the ability of AMRES to support real-time processes and fault-tolerant embedded systems.
- (U) \$522** Continued the Embedded Systems Interoperability Demonstration. Continued research activities to leverage open systems hardware, software, and simulated tactical communications links to provide real-time communications between multiple tactical platforms, an airborne C2 platform, and the emerging battlespace infosphere. Conducted simulation tests to evaluate real-time communications capabilities and performed affordability analyses for the demonstration.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0708612F Computer Resources Support Improvement Program	4851
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$550 Continued developing the Embedded Information System Re-engineering (EISR) technology demonstration. Completed development of an automated re-engineering capability to evolve software for embedded information systems. Completed development of the software tools to implement re-engineering technologies. Tested and demonstrated an EISR system with an established pilot program. Transitioned the EISR technologies to customers.</p> <p>(U) \$224 Continued Real-Time (RT) Java for Embedded Systems to investigate RT Java applicability to the infosphere and embedded information system applications, in the context of open system concepts. Demonstrated the functionality of legacy Operational Flight Programs (OFPs) implemented in RT Java. Analyzed and compared the implementation of RT Java OFPs with current OFPs implemented in higher-order languages. Demonstrated the capability of RT Java OFPs to support the interoperability between the Command, Control, Communications, and Intelligence.</p> <p>(U) \$2,276 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$458 Continue development of technologies and methodologies that will incrementally upgrade legacy systems to support their cost-effective employment and sustainment. Conduct life cycle cost and trade off analyses of the different technologies and methodologies. Continue demonstrating, in designated aircraft, the processes and tools for wrapping embedded software, real-time object request broker technology, and emulation technology into fielded weapon systems. Continue transition of these technologies as they mature and are validated.</p> <p>(U) \$60 Develop and implement enhancements to the Reconfigurable Aerospace Computer Emulators to improve the reliability and maintainability of aging on-board aerospace computers. Continue validation of developed technologies to incrementally upgrade on-board computers with commercial microprocessor-based computer emulation technology. Demonstrate the backward compatibility of these technologies and enhancements with existing mission critical software.</p> <p>(U) \$60 Continue development of a Virtual Engineering Environment (VEE) for software development. Continue developing test environments incorporating new technologies and commercial-off-the-shelf (COTS) components. Conduct trade off analyses of these technologies and COTS components. Continue demonstrations to validate the effectiveness of VEE in supporting software development and sustainment for weapon systems. Transition VEE to selected weapon system programs.</p> <p>(U) \$515 Continue the Embedded Systems Interoperability Demonstration. Continue integration and testing of open systems hardware, software, and simulated tactical communications links. Continue simulation testing to evaluate the real-time communications capabilities of these open system components. Complete affordability analyses. Develop test plans and procedures to conduct flight testing that will evaluate the real-time</p>		
Project 4851	Page 2 of 7 Pages	Exhibit R-2 (PE 0708612F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0708612F Computer Resources Support Improvement Program

PROJECT

4851

(U) **A. Mission Description Continued**

(U) **FY 2003 (\$ in Thousands) Continued**

communications capabilities of these components.

(U) \$320 Continue development of Embedded Information System Re-engineering (EISR) technologies. Complete development of an automated re-engineering capability to evolve software for embedded information systems. Continue development of the software tools necessary to implement re-engineering technologies. Continue testing and demonstrations of EISR technologies with pilot programs. Transition the EISR technologies to designated software support activities.

(U) \$420 Continue the development of Assured Middleware For Real-Time Embedded Systems. Develop Information Assurance (IA) techniques and technologies for embedded information systems in aerospace and ground-based platforms. Conduct domain analyses to define the requirements for IA technologies. Evaluate commercial-off-the-shelf (COTS) IA technologies and their capabilities in real-time environments. Conduct trade off analyses of these technologies and COTS components. Develop strategies for implementing multi-level secure real-time operating systems that support a secure real-time Common Object Request Broker Architecture.

(U) \$216 Continue analyses of Real-Time (RT) Java for Embedded Systems to investigate RT Java applicability to the infosphere and embedded information system applications. Continue demonstrations of the functionality of legacy Operational Flight Programs (OFPs) implemented in RT Java. Continue analyses of the implementation of RT Java OFPs with current OFPs implemented in higher-order languages. Continue demonstrations of the capability of RT Java OFPs to support the interoperability between the Command, Control, Communications, and Intelligence.

(U) \$2,049 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishment/Planned Program

(U) \$0 No Activity

(U) \$0 Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 7, Operational System Development, because it provides support to operational systems.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2003
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program
	PROJECT 4851

(U) **F. Schedule Profile Continued**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Enterprise Strategy for Aging Avionics												
(U) Embedded Systems Interoperability Demonstration				*		X						
(U) Embedded Information Systems Re-engineering				*			X					
(U) Assured Middleware for Real-Time Embedded Systems		*					X					
(U) Incremental Upgrade of Legacy Systems				*			X					
(U) Reconfigurable Aerospace Computer Emulator						X						
(U) Real-Time DII COE Support**				*								
(U) Virtual Engineering Environment								X				
(U) Real-Time Java for Embedded Systems				*		X						

Notes
X Denotes planned event
* Denotes completed event
** DII COE: Defense Information Infrastructure (DII) Common Operating Environment (COE)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program	PROJECT 4851
--	--	-------------------------------

(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Enterprise Strategy for Aging Avionics	0	0	0
(U) Embedded Systems Interoperability Demonstration	522	515	0
(U) Embedded Information Systems Re-engineering	550	320	0
(U) Assured Middleware for Real-Time Embedded Systems	334	420	0
(U) Incremental Upgrade of Legacy Systems	566	458	0
(U) Reconfigurable Aerospace Computer Emulator	0	60	0
(U) Real-Time Defense Information Infrastructure Common Operating Environment Support	80	0	0
(U) Virtual Engineering Environment	0	60	0
(U) Real-Time Java for Embedded Systems	224	216	0
(U) Total	2,276	2,049	0

(U) **B. Budget Acquisition History and Planning Information (\$ in Thousands)**

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
SAIC	DO	Various	N/A	N/A		50	0	0	Continuing	TBD
TRW	DO	Various	N/A	N/A		220	0	0	Continuing	TBD
Boeing	DO	Various	N/A	N/A		814	1,045	0	Continuing	TBD
Lockheed-Martin	DO	Various	N/A	N/A		992	814	0	Continuing	TBD
Raytheon	DO	Various	N/A	N/A		200	190	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program				PROJECT 4851	
(U) <u>Government Furnished Property:</u>									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
	<u>or Funding</u>	<u>Date</u>	<u>Date</u>						
	<u>Vehicle</u>								
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					2,276	2,049	0	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project					2,276	2,049	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0901212F SERVICE-WIDE SUPPORT						PROJECT 5060		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5060	Joint Personnel Adjudication System (JPAS)		0	3,980	4,392	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0

In FY2004 and FY2005, DoD is transitioning the JPAS program from the Air Force to the newly re-aligned Defense Security Service (DSS).

(U) A. Mission Description

Joint Personnel Adjudication System (JPAS) is the Department of Defense (DoD) personnel security migrations system for the DoD Central Adjudication Facilities (CAFs) and DoD Security Managers and Special Security Officers. JPAS represents the virtual consolidation of the DoD CAFs and ensures standardization and re-engineering of core personnel security and adjudication processes. JPAS will use centralized databases with centralized computer processing and application programs. Two applications support JPAS: the Joint Adjudication Management System (JAMS, DoD CAF personnel only) and the Joint Clearance and Access Verification System (JCAVS) for approximately 20,000 CAF customers (non-SCI and SCI {Sensitive Compartmented Information} security managers) and 10,000 industry security managers. JPAS is also a DoD E-government program and the first phase was implement on 20 December 02 as per Office of Management and Budget (OMB) mandate. Previously funded with O&M dollars; however, current development activities require funding using RDT&E dollars.

(U) FY 2002 (\$ in Thousands)

- (U)** \$0 Accomplishments/Planned Program
- (U)** \$0 No Activity
- (U)** \$0 Total

(U) FY 2003 (\$ in Thousands)

- (U)** \$0 Accomplishments/Planned Program
- (U)** \$1,584 Implement/Integrate Automated Continuing Evaluation System (ACES)
- (U)** \$891 Interface Enhancements
- (U)** \$921 Public Key Infrastructure (PKI)/Common Access Card (CAC)
- (U)** \$584 Govt Program Office Infrastructure
- (U)** \$3,980 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003																																																							
BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0901212F SERVICE-WIDE SUPPORT	PROJECT 5060																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$3,731 E-Report for Adjudication-Implementation</p> <p>(U) \$295 Interoperability with DoD Criminal Agencies - Requirements/Programming</p> <p>(U) \$170 Interoperability with Defense Finance and Accounting Services (DFAS) - Requirements/Programming</p> <p>(U) \$196 Interface Enhancements</p> <p>(U) \$4,392 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This effort is in Budget Activity 07, Operational System Development, because the program modernizes Automated Information Systems (AIS).</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">4,090</td> <td style="text-align: center;">4,473</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td style="text-align: center;">4,090</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td style="text-align: center;">-70</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-40</td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: center;">-81</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td></td> <td style="text-align: center;">3,980</td> <td style="text-align: center;">4,392</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Funding realigned in FY03 and 04 from O&M to RDT&E per DoD IG Report. Budgeting for outyear funding is pending.</p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	4,090	4,473	TBD	(U) Appropriated Value		4,090			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-70			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram		-40			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR			-81		(U) Current Budget Submit/FY 2004 PBR		3,980	4,392	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	0	4,090	4,473	TBD																																																					
(U) Appropriated Value		4,090																																																							
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(U) Adjustments to Budget Years Since FY 2003 PBR			-81																																																						
(U) Current Budget Submit/FY 2004 PBR		3,980	4,392	TBD																																																					
Project 5060	Page 2 of 5 Pages	Exhibit R-2 (PE 0901212F)																																																							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901212F SERVICE-WIDE SUPPORT			PROJECT 5060			
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>	
(U)	ACES Cost Projection						1,584			0	
(U)	Interface Enhancements						891			196	
(U)	PKI/CAC						921			0	
(U)	Program Office						584			0	
(U)	E-Report for Adjudication-Implementation									3,731	
(U)	Interoperability with DoD Criminal Agencies-Requirements/Programming									295	
(U)	Interoperability with DFAS-Requirements/Programming									170	
(U)	Total						3,980			4,392	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	EDS	FFP	FY04	TBD	TBD	0	0	2,505	4,392	Continuing	TBD
<u>Support and Management Organizations</u>											
	SPO Support							584	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	HAI - IV&V; Training	FFP	FY04	TBD	TBD	0	0	891	0	Continuing	TBD
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0901212F SERVICE-WIDE SUPPORT			5060	
(U) Government Furnished Property Continued:						
<u>Support and Management Property</u>						
N/A						
<u>Test and Evaluation Property</u>						
N/A						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	0	2,505	4,392	TBD
	Subtotal Support and Management			584	0	TBD
	Subtotal Test and Evaluation	0	0	891	0	TBD
	Total Project	0	0	3,980	4,392	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901218F Civilian Compensation Program					PROJECT 4139	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4139 Civilian Compensation Program	10,973	7,057	7,130	7,291	7,425	7,619	7,729	7,780	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	
<p>(U) <u>A. Mission Description</u> This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs.</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$10,973 Required to continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease. (U) \$10,973 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$7,057 Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease. (U) \$7,057 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u> (U) \$0 Accomplishments/Planned Program (U) \$7,130 Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease. (U) \$7,130 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This Program Element (PE) is in Budget Activity 7 in support of payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81.</p>											
Project 4139			Page 1 of 4 Pages				Exhibit R-2 (PE 0901218F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
07 - Operational System Development				0901218F Civilian Compensation Program				4139				
(U) C. Program Change Summary (\$ in Thousands)												
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>				<u>Total Cost</u>		
(U)	Previous President's Budget			7,019	7,132	7,262				TBD		
(U)	Appropriated Value			7,019	7,132							
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions			-85	-75							
	b. Small Business Innovative Research											
	c. Omnibus or Other Above Threshold Reprogram											
	d. Below Threshold Reprogram			4,069								
	e. Rescissions											
(U)	Adjustments to Budget Years Since FY 2003 PBR			-30		-132						
(U)	Current Budget Submit/FY 2004 PBR			10,973	7,057	7,130				TBD		
(U)	<u>Significant Program Changes:</u>											
	N/A											
(U) D. Other Program Funding Summary (\$ in Thousands)												
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E											
(U)	Other APPN											
(U)	Operation and Maintenance	25,245	25,759	26,789	27,860					0	TBD	
(U)	<u>E. Acquisition Strategy</u>											
	N/A											
(U)	<u>F. Schedule Profile</u>											
					<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
					1	2	3	4	1	2	3	4
(U)	N/A											

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0901218F Civilian Compensation Program			4139			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	n/a					10,973		7,057		7,130	
(U)	Total					10,973		7,057		7,130	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</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>						
	n/a										
	<u>Product Development Organizations</u>										
	n/a										
	<u>Support and Management Organizations</u>										
	n/a										
	<u>Test and Evaluation Organizations</u>										
	n/a										
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	n/a										
	<u>Support and Management Property</u>										
	n/a										
	<u>Test and Evaluation Property</u>										
	n/a										
Project 4139											
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Exhibit R-3 (PE 0901218F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
07 - Operational System Development			0901218F Civilian Compensation Program			4139
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
					<u>Budget to</u>	<u>Total</u>
					<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
NA						
Subtotal Product Development						
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project						TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE
February 2003

BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0901538F FIRST					PROJECT 5036	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5036 Financial Information Resource System (FIRST)	0	15,246	13,464	15,773	13,269	13,867	14,074	14,259	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2003, project 5036, Financial Information Resource System (FIRST), efforts were transferred from PE 0303141F, GCSS-AF, project 4907, Financial Information Resource System (FIRST), in order to provide logical program grouping and to enhance program oversight. Neither program requirements nor program management were impacted by this transfer.

(U) A. Mission Description

FIRST is a software development effort that will provide an integrated, modern, seamless financial management system that enables authorized users (from Air Staff to base level) to plan, program, and execute their budgets. FIRST is ultimately envisioned to be the foundation for the Air Force's Planning, Programming, and Budgeting System (PPBS). FIRST will be developed using the Spiral Development approach. The core increments include Acquire Accounting, Budget Formulation, Funds Management, Budget Execution, and Cost Modeling. Additional increments of FIRST will continue development of legacy system's functionality contained in the Automated Business Services System (ABSS), Budget Enactment Management Information System (BEMIS), and the Obligation Adjustment Reporting System (OARS). FIRST will be compliant with the Clinger-Cohen Act, Financial Management Modernization Program (FMMP), the Joint Technical Architecture (JTA), GCSS-Air Force Integration Framework, C4ISR, and incorporate Public Key Infrastructure initiatives (such as electronic signature capability). FIRST will be integrated onto the GCSS-AF architecture.

Acquire Accounting provides flexible, easy-to-use report generation and decision support tools for Air Force managers, incorporates the new DOD Standard Fiscal Codes (SFC) into FIRST, and delivers timely budget execution data to minimize the budget community's dependency on formal end-of-month accounting reports. The Budget Formulation increment provides for programming, budget formulation, budget justification processes and documentation. It encompasses the budget exercise process, which affects all organizational levels and all users, and is based on core financial and selected program information used to build the Air Force budget. Funds Management encompasses the methods and procedures for maintaining control over the status of adjustments to the President's Budget (PB), receipt and distribution of program authority and budget authorizations in accordance with established business rules. Budget Execution provides analysis tools and execution data to budget offices at all levels. It includes analysis tools for monitoring budget execution information, determining unfunded requirements, and fiscal year-end processing. The Cost Modeling increment provides interactive cost modeling capability for manpower, flying hours, civilian pay, and other similar model driven costs based on resource information. In accordance with the Operational Requirements Document (ORD), FIRST will continue development of legacy systems (e.g., Automated Business Services System (ABSS), Budget Enactment Management Information System (BEMIS), and Obligation Adjustment Reporting System (OARS)) into FIRST.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0901538F FIRST	5036
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$842 Application Development & Test for Acquire Accounting</p> <p>(U) \$4,268 Application Development & Test for Budget Formulation</p> <p>(U) \$40 Application Development & Test for Funds Management/Budget Execution</p> <p>(U) \$8,694 Development of legacy system functionality into FIRST (e.g., ABSS, OARS, BEMIS)</p> <p>(U) \$1,302 GCSS-AF Test & Integration</p> <p>(U) \$100 Government Independent Test and Assessment</p> <p>(U) \$15,246 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplished/Planned Program</p> <p>(U) \$582 Application Support for Acquire Accounting</p> <p>(U) \$5,704 Application Development & Test for Budget Formulation</p> <p>(U) \$44 Application Development & Test for Funds Management/Budget Execution</p> <p>(U) \$5,854 Development of legacy system functionality into FIRST (e.g., ABSS, OARS, BEMIS)</p> <p>(U) \$1,180 GCSS-AF Test & Integration</p> <p>(U) \$100 Government Independent Test and Assessment</p> <p>(U) \$13,464 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).</p>		
Project 5036	Page 2 of 5 Pages	Exhibit R-2 (PE 0901538F)

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
07 - Operational System Development				0901538F FIRST			5036				
(U) C. Program Change Summary (\$ in Thousands)											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			0	21,326	16,212		TBD			
(U)	Appropriated Value			0	21,326						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions				-369						
	b. Small Business Innovative Research										
	c. Omnibus or Other Above Threshold Reprogram				-211						
	d. Below Threshold Reprogram										
	e. Rescissions										
(U)	Adjustments to Budget Years Since FY 2003 PBR				-5,500	-2,748		TBD			
(U)	Current Budget Submit/FY 2004 PBR			0	15,246	13,464		TBD			
(U)	<u>Significant Program Changes:</u>										
	FIRST development effort was realigned to coincide with delivery of OSD Financial Management Modernization Program (FMMP) architecture. This has resulted in reduced FY2003 and FY2004 funding requirements and re-ordering of priorities of the development efforts.										
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<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>FY 2008</u>	<u>FY 2009</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>Estimate</u>	<u>Complete</u>	
(U)	RDT&E, AF (PE 0303141F)	9,719	0	0	0	0	0	0	0	Continuing	TBD
(U)	Other Procurement, AF (PE 0901538F)	0	1,180	1,882	729	773	801	816	832	Continuing	TBD
(U)	O&M, AF; (PE 0308610F)	2,900	3,300	3,500	3,500	3,500	3,500	3,500	3,500	Continuing	TBD
(U)	<u>E. Acquisition Strategy</u>										
	All major contracts awarded after full and open competition.										
(U)	<u>F. Schedule Profile</u>										
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0901538F FIRST					5036				
(U) F. Schedule Profile Continued														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Acquire Accounting Deployment							X						
(U)	Budget Formulation Spiral Readiness Reviews								X		X		X	
(U)	Begin Funds Management								X					
(U)	Begin Budget Execution												X	
(U)	Web-basing of legacy system functionality into FIRST					*								
(U)	GCSS-AF Test & Integration					*				X				
	* - Completed Event													
	X - Planned Event													

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901538F FIRST			PROJECT 5036			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Application Development, Test, and Support for Acquire Accounting					0		842		582	
(U)	Application Development & Test for Budget Formulation					0		4,268		5,704	
(U)	Application Development & Test for Funds Management/Budget Execution					0		40		44	
(U)	Development of legacy system functionality into FIRST (e.g., ABSS, OARS, BEMIS)					0		8,694		5,854	
(U)	GCSS-AF Test & Integration					0		1,302		1,180	
(U)	Government Independent Test and Assessment					0		100		100	
(U)	Total					0		15,246		13,464	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Accenture	CPAF	2 Apr 01	43,981	46,031	0	0	13,844	12,184	Continuing	TBD
	Lockheed Martin SI	CPAF	17 Dec 01	TBD	TBD	0	0	1,302	1,180	Continuing	TBD
<u>Support and Management Organizations</u>											
Not Applicable											
<u>Test and Evaluation Organizations</u>											
	Joint Interoperability Test Center (JITC)					0	0	100	100	Continuing	TBD
	<u>Subtotals</u>					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Subtotal Product Development					0	0	15,146	13,364	TBD	TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation					0	0	100	100	TBD	TBD
	Total Project					0	0	15,246	13,464	TBD	TBD



DEPARTMENT OF THE AIR FORCE
 HEADQUARTERS AIR FORCE MATERIEL COMMAND
 WRIGHT-PATTERSON AIR FORCE BASE OHIO

10 FEB 2003

MEMORANDUM FOR SAF/FMBIZ

FROM: HQ AFMC/CEP
 4225 Logistics Avenue
 Wright-Patterson AFB OH 45433-5746

SUBJECT: FY 2004 Research Development Test and Evaluation (RDT&E) Construction Program
 President's Budget Investment Call

1. In accordance with Air Force Instruction (AFI) 65-601, Volume 1, Chapter 13, we are submitting for your review, Air Staff coordination, and congressional notification the AFMC FY 2004 RDT&E Construction Program and changes to the FY 2003 President's Budget Investment Call.

<u>FY</u>	<u>Project #</u>	<u>Title</u>	<u>PE</u>	<u>(\$000)</u>	<u>Remarks</u>
2001		Minor Construction	6.22.02F	502	New FY01 Projects
2002		Minor Construction	6.22.02F	404	New FY02 Project
2002		Minor Construction	6.47.59F	350	New FY02 Project
2003		Minor Construction	2.76.05F	640	New FY03 Project
2003		Minor Construction	6.22.02F	275	Moved from FY01
2004		None			

Each of the projects has been reviewed and we find that they meet the RDT&E funding criteria as outlined in AFI 65-601. The RDT&E (Appn 3600) Minor Construction (MC) requirements are listed by Program Element (PE) but are line item listed by base on the attached DD Form 1391s.

2. Our point of contact for this effort is Mr. Art Rosenfelder, HQ AFMC/CEPD, DSN 787-7610.

Mark A. Holbrook

MARK A. HOLBROOK
 Acting Chief, Programs Division
 Directorate of the Command Civil Engineer

Attachment:
 DD Forms 1391, Misc Minor Construction

cc:
 HQ USAF/ILEC
 HQ AFMC/FMA/DRS/DOR
 HQ AFRL/DS
 SAF/AQXR

1. COMPONENT AIR FORCE		FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION MESA RESEARCH LAB, ARIZONA			4. PROJECT TITLE MINOR CONSTRUCTION <\$750,000	
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 310-925	7. PROJECT NUMBER ANYG010001	8. PROJECT COST (\$000) EBIC 529 245	

9. COST ESTIMATES			
ITEM	U/M	QUANTITY	COST
CONSTRUCT SCIF, BLDG 561	LS		245.0
SUPPORTING FACILITIES			0.0
SUBTOTAL			245.0
PROFIT AND OVERHEAD (0 %)			0.0
TOTAL FUNDED COST			245.0
UNFUNDED COST (0 %)			0.0
TOTAL REQUEST			245.0

10. Description of Proposed Construction: Alter partition walls, electrical distribution, heating ventilation and air conditioning, and provide enhanced intrusion and fire detection system within Bldg Rms 120/121/122.

11. Requirement: As required.

PROJECT: Construct SCIF Facility in Bldg 561. (Minor Construction using FY01 RDT&E funds)

REQUIREMENT: A classified working area within BLDG 561 Rooms 120/121/122, constructed in accordance with DCID 1/21 (SCIF) construction standards, is required to support the increased mission requirements that have dictated the need to expand the system high processing areas within Bldg 561.

CURRENT SITUATION: Currently all SCIF spaces within the facility is fully utilized by the current mission and cannot accommodate any additional workload being planned to develop and deliver National Security products.

IMPACT IF NOT PROVIDED: AFPL's ability to accomplish work at classification levels requiring a SCIF will be seriously degraded resulting in a work stoppage and late delivery of National Security products.

1. COMPONENT AIR FORCE		FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION MESA RESEARCH LAB, ARIZONA			4. PROJECT TITLE MINOR CONSTRUCTION <\$750,000			
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 310-925	7. PROJECT NUMBER ANYG010003	8. PROJECT COST (\$000) HEIC 529 257			
9. COST ESTIMATES						
ITEM	U/M	QUANTITY	UNIT	COST		
ALTER R&D SUPPORT AREAS, BLDG 570 SUPPORTING FACILITIES	LS			257.0		
SUBTOTAL				0.0		
PROFIT AND OVERHEAD (0 %)				257.0		
TOTAL FUNDED COST				0.0		
UNFUNDED COST (0 %)				257.0		
TOTAL REQUEST				0.0		
10. Description of Proposed Construction: Alter R&D support areas in Rooms 105/106/107/109/110, Bldg 570. Project consists of removal of asbestos containing materials, reconstruction of wall surfaces, construction of partition walls, and alteration of secondary utilities and safety systems.						
11. Requirement: As required.						
<u>PROJECT:</u> Alter R&D support areas Building 570. (Minor Construction using FY01 RDT&ER funds)						
<u>REQUIREMENT:</u> A network operations security center (NOSC) and expand R&D machine shop fabrication are required to comply with current AF physical communications requirements.						
<u>CURRENT SITUATION:</u> Mesa Research Site currently does not have an installation NOSC in compliance with AF physical security communications requirements. In addition, increased R&D mission requirements have outlined the strong need to expand the prototype fabrication areas.						
<u>IMPACT IF NOT PROVIDED:</u> Mesa Research Site will continue to be out of compliance with physical security requirements mandated by AF communications security instructions. Further, failure to expand prototype fabrication areas will result in significant delays in delivery of prototype Warfighter Training systems.						

1. COMPONENT AIR FORCE		FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION MESA RESEARCH LAB, ARIZONA		4. PROJECT TITLE MINOR CONSTRUCTION <\$750,000			
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 310-925	7. PROJECT NUMBER ANYG010018	8. PROJECT COST (\$000) ERIC 529 404		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT	COST
FORCE PROTECTION EQUIP UPGRADES SUPPORTING FACILITIES		IS			404.0 0.0
SUBTOTAL					404.0
PROFIT AND OVERHEAD (0 %)					0.0
TOTAL FUNDED COST					404.0
UNFUNDED COST (0 %)					0.0
TOTAL REQUEST					404.0
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)					(114.0)
10. Description of Proposed Construction: Upgrade existing CCTV security system, replace existing fire detection system in bldg. 558, and install new back-up power generator for security operations alarm center in bldg. 561.					
11. Requirement: As required.					
PROJECT: Force Protection Equipment Installation. (Minor Construction using FY02 RDT&E funds)					
<p>REQUIREMENT: 12 exterior/interior CCTV security cameras are required throughout the installation perimeter and main entries, to provide security protection in accordance with current Force Protection standards. Replacement of the existing fire detection systems is needed to meet current fire safety codes. A back-up power generator and associated support components for the Mesa Research Site central security operations alarm center are required to provide backup power in the event of a local power failure.</p> <p>CURRENT SITUATION: Currently, the existing CCTV system has exceeded its original designed capacity and failed. The existing system is inadequate to meet today's force protection requirements. In addition, the fire detection system fails to provide recognized standard coverage in accordance with modern fire safety codes and is beyond it designed life cycle. Back-up power generation capability is not available for the critical alarm systems at the USAF, Mesa Research Site.</p> <p>IMPACT IF NOT PROVIDED: Failure to provide these necessary alterations and enhancements could possibly result in a failure to recognize a critical alarm condition, thereby resulting in delayed response by emergency response forces further resulting in possible damage to USAF resources or injury/loss of life of personnel.</p>					

1. COMPONENT AIR FORCE		FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION EDWARDS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE MINOR CONSTRUCTION < \$750,000			
5. PROGRAM ELEMENT 64759	6. CATEGORY CODE 442-258	7. PROJECT NUMBER FSPM022531	8. PROJECT COST (\$000) RHIC 529 349.32		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT	COST
CONSTRUCT LOX BULK STORAGE SUPPORTING FACILITIES		LS			110.0 239.3
CONCRETE PAD		SF	14,800	6	(94.7)
ACCESS ROAD		LF	600	116	(69.6)
UTILITIES		LS			(75.0)
SUBTOTAL					349.3
PROFIT AND OVERHEAD (0 %)					0.0
TOTAL FUNDED COST					349.3
UNFUNDED COST (0 %)					0.0
TOTAL REQUEST					349.3
10. Description of Proposed Construction: Relocate LOX Bulk Storage from Pad 15 to an area south of Pad 5. Work includes construction of new concrete pad, parking areas, access road, construction of a small office with restroom and connection to utilities.					
11. Requirement: As required.					
PROJECT: Construct/Relocate LOX Bulk Storage facility. (Minor Construction using FY02 RDT&E funds)					
REQUIREMENT: Relocation of the LOX Bulk Storage facility is required to support testing of future spacecraft at the AFFTC.					
CURRENT SITUATION: The existing LOX Bulk Storage facility is located on Pad 15, which will be used for fueling/de-fueling of experimental spacecraft for flight testing. The location of the LOX Bulk Storage facility will create an explosive safety hazard when test vehicles are fueled/de-fueled.					
IMPACT IF NOT PROVIDED: The LOX Bulk Storage facility will remain within the explosive safety zone during fueling/de-fueling operations. An accident at pad 15 will pose an unacceptable risk to the LOX Bulk Storage facility.					

1. COMPONENT AIR FORCE		FY 2003 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE MC LESS THAN \$750,000			
5. PROGRAM ELEMENT 27605	6. CATEGORY CODE 141-764	7. PROJECT NUMBER MEMV031401	8. PROJECT COST (\$000) ERIC 529 640		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT	COST
B-1 SIMULATOR BAY		SF	2,400	250	600.0
SUPPORTING FACILITIES					40.0
SITE WORK		LS			(40.0)
SUBTOTAL					640.0
PROFIT AND OVERHEAD (0 %)					0.0
TOTAL FUNDED COST					640.0
UNFUNDED COST (0 %)					0.0
TOTAL REQUEST					640.0
<p>10. Description of Proposed Construction: Construct an addition to Building 942, Theater Aerospace Command and Control Simulation Facility (TACCSF) to house a B-1 Simulator, with reinforced concrete foundation and floor slab, masonry walls, and standing seam metal roof. Includes site preparation, communications support, and all supporting utilities.</p> <p>11. Requirement: As required.</p> <p>PROJECT: Construct a B-1 simulator bay (New Mission). Project includes building addition with all supporting utilities, HVAC, fire suppression/ detection, security measures, and communications support.</p> <p>REQUIREMENT: Adequate high-bay space is required to house a B-1 Weapon Systems Trainer (WST) that will be modified as part of an RDT&E program to interconnect all USAF B-1 WSTs in a distributed fashion.</p> <p>CURRENT SITUATION: As a result of the recent USAF-wide B-1 mission restructuring, the B-1 WST currently located at McConnell AFB will be moved to Ellsworth AFB once facilities are built (FY06). EQ ACC will be modifying all B-1 WSTs to allow them to be hooked up in a distributed fashion in order to participate in the CSAF-directed Distributed Mission Operations (DMO)/Distributed Mission Training (DMT) activities such as the DESERT PIVOT virtual flag at TACCSF. Because TACCSF has extensive background and experience in distributed modeling and simulation, the TACCSF facility at Kirtland AFB was identified as the most logical location for the WST to reside while Ellsworth AFB construction is under way. Once development efforts are completed and it's proven it can effectively participate in DMO/DMT activities, the remaining B-1 WSTs modifications will be made. TACCSF has a high-bay area in its existing building; however, the B-1 WST will not fit without major construction modifications.</p> <p>IMPACT IF NOT PROVIDED: Without the B-1 WST device installed and operational in this new TACCSF extension, on-going updates and DMO/DMT development will not take place. DMO/DMT development to meet the CSAF directive would be extremely difficult and significantly delayed, thus critically impacting the B-1 training community to participate in DMO/DMT activities. Temporarily storing the B-1 WST device would not only incur storage costs but would also cause its configuration to lag several versions behind the operational baseline. Moving the B-1 WST to TACCSF allows all current functionality to continue and improves the B-1 WST capabilities, adding value to the USAF B-1 fleet.</p>					

1. COMPONENT AIR FORCE		FY 2003 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE MINOR CONSTRUCTION < \$750,000			
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 312-477	7. PROJECT NUMBER MEMV011664	8. PROJECT COST (\$000) ERIC 529 275		
9. COST ESTIMATES					
ITEM	U/M	QUANTITY	UNIT	COST	
CONSTRUCT LAB SUPPORT SPACE B472	LS				275.0
SUPPORTING FACILITIES					0.0
SUBTOTAL					275.0
PROFIT AND OVERHEAD (0 %)					0.0
TOTAL FUNDED COST					275.0
UNFUNDED COST (0 %)					0.0
TOTAL REQUEST					275.0
10. Description of Proposed Construction: Construct additional secure laboratory support space adjacent to the high bay Science and Technology (S&T) labs in building 472 with secure access and sound attenuation to STC 45. Addition will be lightweight concrete slab on open web steel bar joists.					
11. Requirement: As required.					
<u>PROJECT:</u> Construct Lab Support Space B472. (Minor Construction using FY03 RDT&E funds)					
<u>REQUIREMENT:</u> Additional lab support space for analysis, engineering, and management support is required adjacent to the high bay S&T labs to improve efficiencies and reduce S&T costs.					
<u>CURRENT SITUATION:</u> Existing facility scope is inadequate to provide for the additional square footage of secure lab support space needed in bldg 472. Current lab support space is housed in other facilities remote from their associated high bay labs.					
<u>IMPACT IF NOT PROVIDED:</u> Operational costs will continue to be higher than necessary due to the split operation.					