

**UNCLASSIFIED**

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303401F Communications Security</b>	<b>PROJECT</b> <b>4861</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4861 Cryptologic 2000	4,627	3,942	4,765	14,638	43,396	48,330	122,429	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

The Cryptologic project consists of 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, 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 specific functions for unique key management systems such as the F-22, Advanced EHF COMSEC/TRANSEC System (ACTS), Joint Strike Fighter, and unique key fill requirements for ECUs for AF applications such as ARC-210, Fighter Data Link, Airborne INtegrated Terminal Group and Multi-Band Multi-Mode Radio. The UAS imports the LCMS user interface, integrated multiple independent UASs into a single commonly supported package, and moderates unique UASs when integration is not possible. Also insulates unique user application software from NSA-supplied software changes and allows 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 upgrade features are included to technologically refresh the system using re-host actions, COTS and user-oriented software where possible, the ultimate aim is to provide a migration path to similar functionality planned under NSA's Key Management Infrastructure (KMI) initiative. Such KMI functionality is expected to emerge about 2015.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0303401F Communications Security</b>	<b>4861</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$2,310            Continued program office contract support of EKMS User Application Software including migration to the Key Management Infrastructure (KMI) and the Browser-Based Development effort. (NOTE: This BPAC is no longer supporting AF PKI since it is now an established program with its own PEC and budget. The DII-COE concept is no longer mentioned because the current way of looking at architectures has changed significantly, and is continuing to evolve.)</p> <p>(U) \$408             Purchased SPO support equipment</p> <p>(U) \$1,909           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) \$4,627           Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$2,140           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) \$1,802           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) \$3,942           Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$1,451           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) \$3,314           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) \$4,765           Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></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>		
Project 4861	Page 2 of 6 Pages	Exhibit R-2 (PE 0303401F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0303401F Communications Security</b>			<b>4861</b>		
<b>(U) C. Program Change Summary (\$ in Thousands)</b>									
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>	
(U)	Previous President's Budget			4,857	4,131	4,777			
(U)	Appropriated Value			4,857	4,131				
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions								
	b. Small Business Innovative Research			-149					
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram			-36					
	e. Rescissions			-45					
(U)	Adjustments to Budget Years Since FY 2002 PBR				-189	-12			
(U)	Current Budget Submit/FY 2003 PBR			4,627	3,942	4,765		TBD	
<b>(U) Significant Program Changes:</b>									
LRIP of KOV-21 cards has been pushed forward until FY05 to allow NSA more time to line up contracts for this purpose. In the interim, there is a process that allows getting the information to the field, although it is more cumbersome and time consuming.									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U)	AF RDT&E								
(U)	Other APPN								
<b>(U) E. Acquisition Strategy</b>									
All major contracts within this Program Element are awarded after full and open competition.									
<b>(U) F. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002							
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT						
<b>07 - Operational System Development</b>				<b>0303401F Communications Security</b>				<b>4861</b>						
<b>(U) <u>F. Schedule Profile Continued</u></b>					<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>			
			1	2	3	4	1	2	3	4	1	2	3	4
(U)	Continue End User Application SW devel., Common UAS, & KOV-21 integ.			*										
(U)	Continue Program office contract support of the EKMS UAS for KMI			*										
(U)	SPO Support Equipment			*		*								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303401F Communications Security				PROJECT 4861			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	Software Development					4,627	3,942	4,765			
(U)	Total					4,627	3,942	4,765			
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>Performing Organizations:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	SAIC	BPA	May 98	N/A	N/A	0	1,611	1,802	1,451	Continuing	TBD
	Mitre	FFRDC	Nov 00	N/A	N/A	0	3,016	2,140	3,314	Continuing	TBD
<u>Support and Management Organizations</u>											
	N/A										
<u>Test and Evaluation Organizations</u>											
	N/A										
(U) <b>Government Furnished Property:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>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 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0303401F Communications Security</b>			<b>4861</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	4,627	3,942	4,765	TBD
	Subtotal Support and Management					
	Subtotal Test and Evaluation					
	Total Project	0	4,627	3,942	4,765	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303601F MILSATCOM Terminals</b>	<b>PROJECT</b> <b>2487</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2487 MILSATCOM Terminals	16,016	40,431	72,712	125,932	159,464	171,562	152,527	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Cost to Complete is TBD until Wideband and Protected Tactical, Broadcast, Strategic and Laser Communications terminals study is completed in July 02.

(U) **A. Mission Description**  
 The MILSATCOM Terminals program develops equipment enabling users to communicate via Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF), Wideband Gapfiller System (WGS), Defense Satellite Communication System (DSCS), and other military satellites, as well as commercial satellites, to support tactical Aerospace Expeditionary Force requirements and maintain essential strategic connectivity for nuclear forces. Program RDT&E currently supports the following efforts:

- 1) Concept development work to ensure high-capacity connectivity for tactical and strategic air forces and ground command and control components -- primarily assessment of commercial/military technological alternatives and continued development of an Air Force terminals roadmap.
- 2) Ground Multiband Terminal (GMT) development. GMT will replace Air Force Ground Mobile Force terminals with higher-capacity military communications to provide tactical ground forces with connectivity via the Ka-band Wideband Gapfiller System, 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 force users. FAB-T variants will provide ground and airborne command posts and other aircraft with connectivity to the Milstar, and AEHF satellites, while providing an open architecture terminal to support future spirals for the WGS system, EHF payloads on polar-orbiting and UHF Follow-on (UFO) satellites and Global Broadcast Service payloads on certain UFO satellites.
- 4) Initiate development of Wideband Tactical, Protected Tactical and Broadcast Terminal to operate with Advance Wideband System (AWS) and plan for the development of Strategic Terminals.
- 5) Initiate development of Laser Communication Terminals to operate with Advance Wideband System (AWS).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0303601F MILSATCOM Terminals</b>	<b>2487</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$2,279	Continued MILSATCOM terminals support activities	
(U) \$1,563	Continued contractor test and operations support	
(U) \$3,574	Continued concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$5,600	Began Ground Multiband Terminal (GMT) development	
(U) \$3,000	Began Airborne Wideband Terminal (AWT) risk reduction	
(U) \$16,016	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$3,303	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$17,218	Continue Ground Multiband Terminal (GMT) development	
(U) \$19,910	Begin Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development.	
(U) \$40,431	Total	
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$1,077	Continue concept/prototype demo/MILSATCOM Terminals roadmap/SATCOM testing	
(U) \$53,457	Continue Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development	
(U) \$2,678	Continue Ground Multiband Terminal (GMT) development	
(U) \$6,500	Begin JSTARS development to assume ABCCC role	
(U) \$6,000	Begin initial development for Wideband Tactical, Protected Tactical and Broadcast Terminals and plan for Strategic Terminals.	
(U) \$3,000	Begin initial development for Laser Communication Terminals	
(U) \$72,712	Total	
<b>(U) <u>B. Budget Activity Justification</u></b>		
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.		
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BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0303601F MILSATCOM Terminals</b>			<b>2487</b>			
<b>(U) C. Program Change Summary (\$ in Thousands)</b>										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>		
(U)	Previous President's Budget			17,634	41,763	57,601		2,437,581		
(U)	Appropriated Value			17,797	41,763					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions			-125						
	b. Small Business Innovative Research			-1,163						
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram			-453						
	e. Rescissions			-39						
(U)	Adjustments to Budget Years Since FY 2002 PBR			-1	-1,332	15,111				
(U)	Current Budget Submit/FY 2003 PBR			16,016	40,431	72,712		TBD		
<b>(U) Significant Program Changes:</b>										
<p>In the fall of 2000, the Airborne Battlefield Command and Control Center (ABCCC) mission was divested and platforms such as the AWACS and JSTARS picked up portions of the mission. The AITG program had \$6.5M budgeted in FY 03 for 3 B-kits, 1 A-kit and A-Kit non-recurring engineering for the ABCCC platform (EC-130E). These funds will now be used for JSTARS non-recurring engineering and A-kit development. Initial development of Wideband Tactical , Protected Tactical, Broadcast Terminals and Laser CommunicationTerminals to operate with Advance Wideband System (AWS). Other changes reflect funds reprogrammed for higher DoD priorities.</p>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement, Air Force, WSC 119992 (Budget Activity 5, P-27 and P-61)* * (1)	26,942	44,946	35,364	38,776	30,811	40,937	74,237	Continuing	TBD
(U)	Other Procurement, Air Force, 'MILSATCOM Space', WSC 836780 (Budget Activity 3,	30,064	20,730	28,303	61,727	144,866	90,269	64,878	Continuing	TBD
Project 2487										

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303601F MILSATCOM Terminals</b>			PROJECT <b>2487</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
P-61)*                      * (2)									
*See the exhibits for these procurement funds for more details on MILSATCOM terminals efforts for which development has been completed.									
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 0603432F Polar MILSATCOM (Space)									
PE 0603854F Wideband Gapfiller System (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									
* (1) Spares included.									
* (2) Spares not included									
<b>(U) E. Acquisition Strategy</b>									
The FAB-T contract is planned to be awarded in May 2002. Acquisition Strategy Panel (ASP) is scheduled for January 2002. This contract will initiate development of a family of common MILSATCOM terminals to work with next generation space segments including Wideband Gapfiller System (WGS), Advanced Wideband System (AWS), Advanced Polar and Advanced EHF (AEHF). In addition, will initiate development of Wideband Tactical, Protected Tactical, Broadcast and Laser Communication Terminals to operate with Advanced Wideband System (AWS).									
<b>(U) F. Schedule Profile</b>									
	<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
Project 2487			Page 4 of 7 Pages			Exhibit R-2 (PE 0303601F)			

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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0303601F MILSATCOM Terminals</b>					<b>2487</b>				
<b>(U) <u>F. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) GMT Development			*											
(U) AWT Risk Reduction	*													
(U) FAB-T Development							X							
(U) JSTARS Development of ABCCC communications capability									X					
(U) Begin init dev of WB/Prot Tac & Broadcast Term and Strat Terminals											X			
(U) Begin init dev of Laser Communication Terminals											X			
* Completed event														
X Planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0303601F MILSATCOM Terminals</b>			<b>2487</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	MILSATCOM terminals support activities					2,279		0		0	
(U)	Contractor test and operations support					1,563		0			
(U)	Concept/Prototype Demo/MILSATCOM Terminals Roadmap/SATCOM testing					3,574		3,303		1,077	
(U)	Ground Multiband Terminal (GMT)					5,600		17,218		2,678	
(U)	Airborne Wideband Terminal risk reduction					3,000		0			
(U)	Family of Advanced Beyond-line-of-sight Terminals (FAB-T) development					0		19,910		53,457	
(U)	Development of ABCCC communications capability for Joint Stars									6,500	
(U)	Wideband Tactical Terminals, Protected Tactical Terminals and Broadcast Terminals									6,000	
(U)	Laser Communication Terminals									3,000	
(U)	Total					16,016		40,431		72,712	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>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	886,989	1,563	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	23,096	23,096	0	5,600	14,268	1,461	1,767	23,096
	TBD (FAB-T contract)	CPAF	May 02	TBD	TBD	0		13,210	47,907	Continuing	TBD
	Miscellaneous	Various	Various	N/A	N/A	651,580	1,219	514		0	653,313
	ESC/JS	AF-616	N/A	N/A	N/A	0	0	0	6,500	0	6,500
	TBD (Wideband Tac. Protected Tac. Broadcast	TBD	TBD		N/A	0	0	0	3,800	Continuing	TBD
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0303601F MILSATCOM Terminals</b>				<b>2487</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
Terminals)										
TBD (Laser Communication	TBD	TBD	N/A	0	0	0	2,000	Continuing	TBD	
Terminals)										
TBD (MUOS)	TBD	TBD	N/A	0	0	0	0	69,235	69,235	
<u>Support and Management Organizations</u>										
MITRE	CPAF	Various	N/A	N/A	107,995	2,939	9,539	7,094	Continuing	TBD
Support Contractors - System	Various	Various	N/A	N/A	159,290	1,854	1,500	2,350	Continuing	TBD
Engineering & Technical Assistance										
Tecolote	Various	Various	N/A	N/A	2,308	705	800	900	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	19,939	636	500	700	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Wright-Labs	AF-616	N/A	N/A	N/A	23,103	1,500	100		0	24,703
Miscellaneous	Various	N/A	N/A	N/A	5,507	0	0		0	5,507
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					1,584,713	8,382	27,992	61,668	TBD	TBD
Subtotal Support and Management					289,532	6,134	12,339	11,044	TBD	TBD
Subtotal Test and Evaluation					28,610	1,500	100		0	30,210
Total Project					1,902,855	16,016	40,431	72,712	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305099F Global Air Traffic Management (GATM)</b>	<b>PROJECT</b> <b>4689</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4689 Global Access Architecture	8,430	8,887	7,200	7,311	7,447	7,730	8,019	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

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

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$2,403 Continue system architecture definitions, development, and certification
- (U) \$1,358 Continue operational requirements analysis, demonstration, and evaluation
- (U) \$2,786 Continue development of common avionics and technologies
- (U) \$1,248 Continue acquisition of ID/IQ aviation equipment
- (U) \$635 Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations
- (U) \$8,430 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305099F Global Air Traffic Management (GATM)</b>	<b>4689</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$2,524	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) \$1,391	Continue acquisition of ID/IQ aviation equipment			
(U) \$649	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U) \$8,887	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$2,092	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) \$1,011	Continue acquisition of ID/IQ aviation equipment			
(U) \$579	Continue Nav/Safety and GPS/NAVWAR integration and interoperability evaluations			
(U) \$7,200	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This program upgrades avionics to add air traffic control capabilities to currently fielded weapon systems and is assigned Budget Activity 7, Operational Systems Development.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	8,508	9,331	7,217	TBD
(U) Appropriated Value	8,508	9,331		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-78	-444		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions				
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								
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT						
<b>07 - Operational System Development</b>		<b>0305099F Global Air Traffic Management (GATM)</b>		<b>4689</b>						
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2002 PBR			-17						
(U)	Current Budget Submit/FY 2003 PBR	8,430	8,887	7,200	TBD					
(U)	<u>Significant Program Changes:</u> FY00 reflects a below threshold reprogramming to support the C-130 Avionics Modernization Program source selection activities.									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
(U)	Aircraft Procurement, AF, BA-5, C-5 Avionics Modernization Program, PE 0401119F	33,003	90,531	125,067	80,524	12,062				341,187
(U)	RDT&E, AF, BA-7, C-5 AMP, PE 0401119F, C-5 Airlift Squadrons	44,489	64,240	10,030						118,759
(U)	Aircraft Procurement, AF, BA-5, C-5, FM Immunity, PE0401119F									
(U)	Aircraft Procurement, AF, BA-5, C-9 NAVSTAR GPS, PE 0401314F	882								882
(U)	Aircraft Procurement, AF, BA-5, C-9 RVSM, PE 0401314F									
(U)	Aircraft Procurement, AF,									
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 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
BA-5, C-9 TAWS, PE 0401314F									
(U) Aircraft Procurement, AF, BA-5, KC-10 NAVSTAR GPS, PE 0401219F									
(U) RDT&E, AF, BA-7, KC-10 GATM, PE 0401219F	19,347	22,774	10,584	2,422					55,127
(U) Aircraft Procurement, AF, BA-5, KC-10 GATM, PE 0401219F	39,321	15,093	8,163	14,085	1,973				78,635
(U) Aircraft Procurement, AF, BA-5, KC-10 FM Immunity, PE 0401219F									
(U) Aircraft Procurement, AF, BA-5, KC-10 TCAS/TAWS, PE 0401219F	547								547
(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	1,160								1,160
(U) Aircraft Procurement, AF, BA-5, C-17 GATM II, PE 0401130F				54,372	57,640	55,089	52,547	29,324	248,972
Project 4689									
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement, AF, BA-5, C-17 RNP-4, PE 0401130F		3,128	2,820	7,967	3,651	1,667			19,233
(U) Aircraft Procurement, AF, BA-5, C-17 TAWS, PE 0401130F	1,840	11,701	18,796	5,082					37,419
(U) Aircraft Procurement, AF, BA-5, C-17 GATM PE 0401130F	31,246	39,516	30,029						100,791
(U) Aircraft Procurement, AF, BA-5, C-20 TAWS, PE 0401314F									
(U) Aircraft Procurement, AF, BA-5, C-21 TCAS, PE 0401314F	370								370
(U) Aircraft Procurement, AF, BA-5, C-21 TAWS, PE 0401314F	157								157
(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									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
0401314F									
(U) Aircraft Procurement, AF, BA-5, T-43 TCAS, PE 0804742F				1,924	4,910	3,239	55		11,325
(U) Aircraft Procurement, AF, BA-5, T-43 TAWS, PE 0804742F	3,002	3,404	1,868	5,184	2,722				16,180
(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	20,100	2,105	3,635	250					26,090
(U) Aircraft Procurement, AF, BA-5, C-135 8.33 radio, PE 0401218F	33,247								33,247
(U) Aircraft Procurement, AF, BA-5, C-135 Interphone replacement, PE 0401218F	1,158								1,158
(U) Aircraft Procurement, AF, BA-5, C-135 GATM, PE 0401218F	19,130	91,200	159,307	157,549	151,846	131,427	137,257	125,213	972,929
(U) Aircraft Procurement, AF, BA-5, C-135 RVSM, PE 0401218F	42,801	19,290							62,091
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305099F Global Air Traffic Management (GATM)</b>				PROJECT <b>4689</b>			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	Aircraft Procurement, AF, BA-5, C-135 TAWS, PE 0401218F	11,800	8,788							20,588	
(U)	Aircraft Procurement, AF, BA-5, C-135 FDR/CVR, PE 0401218F	44,043	36,504	1,598						82,145	
(U)	Aircraft Procurement, AF, BA-5, C-135 Pacer CRAG, PE 0401218F	78,521	1,549							80,070	
(U)	Aircraft Procurement, AF, BA-5, C-135 FM Immunity, PE0401218F	6,424								6,424	
(U)	Aircraft Procurement, AF, BA-5, C-141 TCAS, PE 0401118F	10								10	
(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	375	720							1,095	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305099F Global Air Traffic Management (GATM)				PROJECT 4689		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement, AF, BA-5, E-4 TAWS, PE 0302015F	971								971
(U)	RDT&E, AF BA-5, E-4 , INFRASTRUCTURE MODERNIZATION, PE 0302015F	34,169	17,257	9,017	29,351	21,703				111,497
(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	100	480							580
(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	4,847			49,600	63,800	36,300	7,700		162,247
(U)	Aircraft Procurement, AF, BA-5, H-1 TCAS, PE 0101235F	2,906		292	488					3,686
(U)	Aircraft Procurement, AF, BA-5, B-52, GATM, PE 0101113F						340	51,300	118,800	170,440
Project 4689		Page 8 of 11 Pages						Exhibit R-2 (PE 0305099F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0305099F Global Air Traffic Management (GATM)</b>			<b>4689</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) 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	1,305								1,305
<b>(U) E. Acquisition Strategy</b>									
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.									
<b>(U) F. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) 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									
Project 4689			Page 9 of 11 Pages			Exhibit R-2 (PE 0305099F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305099F Global Air Traffic Management (GATM)</b>				<b>4689</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	System architecture definitions, development, and certification					2,403		2,524		2,092
(U)	Operational requirements analysis, demonstration, and evaluation					1,358		1,484		1,154
(U)	Acquisition of ID/IQ aviation equipment					1,248		1,391		1,011
(U)	Development of common avionics and technologies					2,786		2,839		2,364
(U)	Nav/Safety and GPS/NAVWAR integration and interoperability evaluations					635		649		579
(U)	Total					8,430		8,887		7,200
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
MIT	FFP	Nov 98	N/A	N/A	2,420	1,300	1,350	1,215	Continuing	TBD
Honeywell	FFP	Nov 98	N/A	N/A	2,689	125	240	120	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	142	340	175	Continuing	TBD
MITRE Corporation	CPAF	Oct 99	N/A	N/A	5,188	3,144	2,898	2,478	Continuing	TBD
Horizons Technology Inc	FFP	Feb 99	N/A	N/A	3,974	1,379	1,198	1,375	Continuing	TBD
TASC	CPFF	Jan 99	728	728	728	0	0		0	728
Smiths Industries	FFP	Apr 00	N/A	N/A	194	120	120	120	Continuing	TBD
SAIC	T&M	Dec 99	N/A	N/A	530	0	0	0	0	530
ARINC Inc	FFP	July 99	N/A	N/A	946	140	150	150	Continuing	TBD
Lockheed Martin	CPAF	Jun 00	159	159	159	0	0	0	0	159
Bremmer Associates	FFP	Feb 99	729	729	729	0	0	0	0	729
Northop Grumman	CPAF	Feb 99	2,499	2,499	2,499	0	0	0	0	2,499
Project 4689				Page 10 of 11 Pages				Exhibit R-3 (PE 0305099F)		



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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>								<b>DATE</b> February 2002		
<b>BUDGET ACTIVITY</b>				<b>PE NUMBER AND TITLE</b>					<b>PROJECT</b>	
<b>07 - Operational System Development</b>				<b>0305099F Global Air Traffic Management (GATM)</b>					<b>4689</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
MCR	IDIQ	Feb	N/A	N/A	750	450	420	300	Continuing	TBD
Federal Tech Services	FFP	Aug 99	300	300	300	0	0	0	0	300
DISA/DIT	FFP	Sep 00	N/A	N/A	0	350	640	525	Continuing	TBD
Various	various	various	N/A	N/A	2,188	786	946	475	Continuing	TBD
<u>Support and Management Organizations</u>										
MITRE Corporation	CPAF	Oct 99	N/A	N/A	761	292	315	115	Continuing	TBD
Various	Various	Various	N/A	N/A	788	169	210	100	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
412th FLTS (Edwards AFB)		Various	N/A	N/A	111	33	60	52	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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					26,773	7,936	8,302	6,933	TBD	TBD
Subtotal Support and Management					1,549	461	525	215	TBD	TBD
Subtotal Test and Evaluation					111	33	60	52	TBD	TBD
Total Project					28,433	8,430	8,887	7,200	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305110F Satellite Control Network				PROJECT 3276		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3276	Satellite Control Network	32,873	54,539	17,542	19,845	19,655	24,697	21,263	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 The Air Force Satellite Control Network (AFSCN) mission is to fly operational USAF and other DoD satellites. 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, and weather satellite operations. The AFSCN is the DoD common user network that provides satellite state-of-health, tracking, telemetry, 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.

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 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: Network Operations Upgrades, Communications Upgrades, and Range RTS Upgrades.

COMMUNICATIONS UPGRADES: This effort will transition the current, costly point-to-point AFSCN communications network to a distributed communications system that integrates government and commercial networks. Several standardization efforts are being implemented to improve and modernize the communications segment of the AFSCN, including: Archival recording systems to replace obsolete, manpower-intensive analog equipment with automated, standardized digital COTS

Project 3276 Page 1 of 7 Pages Exhibit R-2 (PE 0305110F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002																						
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>																						
<b>07 - Operational System Development</b>	<b>0305110F Satellite Control Network</b>	<b>3276</b>																						
<p>(U) <b><u>A. Mission Description Continued</u></b>                      and COTS-based systems; Wide Area Network Interface Units (WANIU) which standardize hardware, enable future access to the Defense Information System Network (DISN) global grid, and provide an Asynchronous Transfer Mode (ATM) interface; and Operational Switch Replacement (OSR) to provide increased capacity, reliability, data quality, and user access.</p> <p>RANGE UPGRADES: This effort will upgrade the current Automated Remote Tracking Station (ARTS) and other Range assets. Several integrated projects, which are now grouped into the Remote Tracking Station (RTS) block change effort, will standardize the remote tracking stations, upgrade and/or replace outdated equipment in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs.</p> <p>NETWORK OPERATIONS UPGRADES: These upgrades will build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem deliveries to continue to improve AFSCN resource management capabilities.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$12,736</td> <td>Communications Upgrades: continued upgrades to include OSR and WANIU development.</td> </tr> <tr> <td>(U) \$1,214</td> <td>Range Upgrades: continued Standards Protocol development. Continued Control and Status (C&amp;S) Processor Upgrade development and begin effort to upgrade the ARTS Space/Ground interface upgrade as a continuation of the RTS block change development effort.</td> </tr> <tr> <td>(U) \$384</td> <td>Network Operations Upgrades: began Orbit Analysis Subsystem follow-on development effort to continue upgrades to network operations.</td> </tr> <tr> <td>(U) \$7,298</td> <td>Network Integration and Systems Engineering: continued system engineering and integration of hardware/software to meet evolving satellite program requirements at Operational Control Nodes (OCNs) and RTSs.</td> </tr> <tr> <td>(U) \$11,241</td> <td>Provided program support for Systems Program Office.</td> </tr> <tr> <td>(U) \$32,873</td> <td>Total</td> </tr> </table> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$15,500</td> <td>Communications Upgrades: continue communications upgrades to include completion of OSR and WANIU efforts.</td> </tr> <tr> <td>(U) \$25,849</td> <td>Range Upgrades: continue standards protocol development effort. Continue RTS Block Change development effort and system engineering and network integration.</td> </tr> <tr> <td>(U) \$3,000</td> <td>Network Integration and Systems Engineering: continued system engineering and integration of hardware/software to meet evolving satellite program requirements at OCNs and RTSs.</td> </tr> <tr> <td>(U) \$10,190</td> <td>Provide program support for Systems Program Office.</td> </tr> <tr> <td>(U) \$54,539</td> <td>Total</td> </tr> </table>			(U) \$12,736	Communications Upgrades: continued upgrades to include OSR and WANIU development.	(U) \$1,214	Range Upgrades: continued Standards Protocol development. Continued Control and Status (C&S) Processor Upgrade development and begin effort to upgrade the ARTS Space/Ground interface upgrade as a continuation of the RTS block change development effort.	(U) \$384	Network Operations Upgrades: began Orbit Analysis Subsystem follow-on development effort to continue upgrades to network operations.	(U) \$7,298	Network Integration and Systems Engineering: continued system engineering and integration of hardware/software to meet evolving satellite program requirements at Operational Control Nodes (OCNs) and RTSs.	(U) \$11,241	Provided program support for Systems Program Office.	(U) \$32,873	Total	(U) \$15,500	Communications Upgrades: continue communications upgrades to include completion of OSR and WANIU efforts.	(U) \$25,849	Range Upgrades: continue standards protocol development effort. Continue RTS Block Change development effort and system engineering and network integration.	(U) \$3,000	Network Integration and Systems Engineering: continued system engineering and integration of hardware/software to meet evolving satellite program requirements at OCNs and RTSs.	(U) \$10,190	Provide program support for Systems Program Office.	(U) \$54,539	Total
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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 February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305110F Satellite Control Network</b>	<b>3276</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$5,067	Range Upgrades: continue upgrades to include development of standards and protocols/WAN serv/security, external user connectivity, and RTS Block Change efforts. Continue system engineering and network integration.			
(U) \$2,000	Network Operations Upgrades: continue upgrades to network operations to include development of Resource Scheduling Capacity upgrade and system engineering and network integration.			
(U) \$10,475	Provide program support for Systems Program Office			
(U) \$17,542	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	58,105	56,349	23,531	TBD
(U) Appropriated Value	58,643	56,349		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-411	-1,810		
b. Small Business Innovative Research	-877			
c. Omnibus or Other Above Threshold Reprogram	-12,627			
d. Below Threshold Reprogram	-11,728			
e. Rescissions	-127			
(U) Adjustments to Budget Years Since FY 2002 PBR			-5,989	
(U) Current Budget Submit/FY 2003 PBR	32,873	54,539	17,542	TBD
<b>(U) <u>Significant Program Changes:</u></b>				
FY01: Administrative delays in proposal evaluation schedule delayed follow-on contract basic award (Satellite Control Network Contract -- SCNC) approximately 13 months. Available contract award funds were below threshold reprogrammed and identified as an Omnibus reprogramming source for higher Air Force priorities.				
FY03: Funds realigned from OPAF to RDT&E, AF to correct error in program profile (\$1.552M); funds reduced for higher DOD priorities (-\$7.498M).				
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 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305110F Satellite Control Network				PROJECT 3276	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) OPAF, Electronics & Telecom Equipment (BA 03, PE 0305110F, P-63)	15,694	29,471	45,063	44,567	45,538	53,502	52,348	Continuing	TBD
(U) OPAF, Initial Spares & Repair Parts (BA 05 PE 0305110F, P-104)	1,424	1,523	2,045	4,586	3,295	3,556	3,627	Continuing	TBD
<b>(U) E. Acquisition Strategy</b>									
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. The AF implemented a new streamlined contracting strategy in FY 1996, resulting in the award of the Range & Communications Development Contract (RCDC), the Network Operations Upgrade Contract (NOUC), and the Network Integration Contract (NIC). 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.									
<b>(U) F. Schedule Profile</b>									
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>
				1 2 3 4			1 2 3 4		1 2 3 4
(U) COMMUNICATIONS UPGRADES									
(U) - Archival DD-250					*				
(U) - WANIU DD-250						X			
(U) - OSR Incremental Demonstration Review-3				*					
(U) - OSR FCA/PCA					*				
(U) - OSR DD-250								X	
(U) RANGE UPGRADES (RTS Block Change)									
(U) - Begin RTS Block Change (including ARTS upgrade)						*			
(U) - Begin External User Comm Connectivity								X	
(U) NETWORK OPERATIONS UPGRADES									
Project 3276	Page 4 of 7 Pages				Exhibit R-2 (PE 0305110F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002																																																																	
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Project 3276			Page 5 of 7 Pages				Exhibit R-2 (PE 0305110F)																																																																				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305110F Satellite Control Network</b>				<b>3276</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Communications Upgrades					12,736	15,500	0		
(U)	Range Upgrades					1,214	25,849	5,067		
(U)	Network Ops Upgrades					384	0	2,000		
(U)	Network Integration and Systems Engineering					7,298	3,000	0		
(U)	Program Support					11,241	10,190	10,475		
(U)	Total					32,873	54,539	17,542		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin (Range & Comm Development Contract)	C/CPAF	Mar 96	140,051	140,051	111,815	12,736	15,500	0	0	140,051
Honeywell Technology Solutions (Satellite Control Network Contract*)	C/CPAF	Dec 01	86,200	86,200	0	1,098	25,849	7,067	52,186	86,200
Lockheed Martin (Network Integration Contract)	C/CPAF	May 96	48,957	48,957	38,659	7,298	3,000	0	0	48,957
*note: EACs include basic contract and options but do not include future ECPs										
<u>Support and Management Organizations</u>										
Program Support (FFRDC, SETA, SPO Ops)	various	various	N/A	N/A	57,705	11,741	10,190	10,475	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 February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>				<b>0305110F Satellite Control Network</b>			<b>3276</b>	
(U) <b><u>Performing Organizations Continued:</u></b>								
<u>Test and Evaluation Organizations</u>								
N/A								
(U) <b><u>Government Furnished Property:</u></b>								
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development				150,474	21,132	44,349	7,067	52,186
Subtotal Support and Management				57,705	11,741	10,190	10,475	TBD
Subtotal Test and Evaluation								
Total Project				208,179	32,873	54,539	17,542	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305111F WEATHER SERVICE</b>	<b>PROJECT</b> <b>2738</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2738 Weather Service	19,057	11,202	14,488	16,617	16,824	17,131	17,458	Continuing	TBD
Quantity of RDT&E Articles	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. Efforts include: (a) Cloud Depiction and Forecast System II (CDFS II) upgrades satellite data processing, cloud depiction and forecasting weather support functions for operational commanders and classified national programs and replaces logistically unsupportable mainframe computers at the Air Force Weather (AFW) Strategic Center, Offutt AFB; (b) Global Theater Weather Analysis and Prediction System (GTWAPS) acquires theater weather models and associated hardware to improve AFW theater support capabilities; (c) Tactical Weather Radar (TWR) provides fixed and semi-fixed Doppler weather radar to support forward deployed combat operations worldwide; (d) Space Weather Analysis and Forecast System (SWAFS) builds space environmental support and modernizes software capabilities to meet warfighter requirements; (e) Product Tailoring/Warfighter Applications (PT/WA) provides user workstations capable of ingesting 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; (f) Weather Data Analysis (WDA) provides a fused infrastructure for 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; (g) Observing System 21st Century (OS-21) provides a range of weather observing capabilities, including automated capabilities, at fixed and deployed locations worldwide; (h) Small Tactical Terminal (STT) provides worldwide tactical users with a survivable 'first-in' source of meteorological satellite data, processed by small portable terminals in forward areas of conflict [STT funding aligned to PE 35111F in FY01. Prior year funding in PE 35160F, Defense Meteorological Satellite Program.]; and (i) Forecasting integrates advanced scientific numerical weather prediction capabilities into the AFW Strategic Center for automated and mission-tailored weather forecast products.

(U) Air Force Weather (AFW) programs are aligned under the five core competency areas of Weather Data Collection, Weather Data Analysis, Forecasting, Product Tailoring/Warfighter Applications, and Dissemination described in the AFW Mission Support Plan. Through this alignment, AFW ensures an integrated and systems-oriented approach to program management decisions. Weather Data Collection includes terrestrial and space environmental sensors including TWR, OS-21,

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305111F WEATHER SERVICE</b> PROJECT <b>2738</b>	
(U) <b><u>A. Mission Description Continued</u></b>		
and STT. Weather Data Analysis provides interoperability of AFW processing infrastructure with users and data sources. Weather Forecasting will enhance cloud forecasting capabilities and weather forecasting models and begin merging strategic and operational forecasting for greater efficiency. Product Tailoring/Warfighter Applications implements AFW Reengineering at the theater and tactical levels; at theater level provides timely, fine-scale weather products and services to operational commanders within a given Area of Responsibility; and at tactical level provides front-line weather information to warfighters in support of combat operations. These consolidations and realignments implement the CSAF-directed and approved AFW Strategic Plan.		
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$400	TWR: Completed development of initial system interfaces with forecasting and analysis systems (Weather Data Collection)	
(U) \$1,349	OS-21: Developed and integrated interfaces of component sensor systems (Weather Data Collection)	
(U) \$2,342	WDA: Completed development of architecture for AFW Strategic Center, prepared Milestone B/C documentation, achieved Milestone B/C decision, and conducted risk mitigation assessments (Analysis)	
(U) \$5,817	CDFS II: Continued development of cloud depiction and forecast software (Weather Forecasting)	
(U) \$900	GTWAPS: Completed operational software development and achieved FOC (Weather Forecasting)	
(U) \$4,020	SWAFS: Continued software development for incremental deliveries (Weather Forecasting)	
(U) \$3,863	PT/WA: Continued software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)	
(U) \$366	STT: Continued support for integration of satellite weather data in tactical environment (Weather Data Collection)	
(U) \$19,057	Total	
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$2,689	WDA: Begin software development for enhanced analysis infrastructure (Analysis)	
(U) \$390	CDFS II: Complete development of cloud depiction and forecast software and achieve FOC (Weather Forecasting)	
(U) \$1,178	Forecasting: Develop and integrate scientific advances in weather prediction capabilities (Weather Forecasting)	
(U) \$2,561	SWAFS: Continue software development for incremental deliveries (Weather Forecasting)	
(U) \$4,384	PT/WA: Continue software development and integration with regional and tactical weather systems (Product Tailoring/Warfighter Applications)	
(U) \$11,202	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 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
<b>07 - Operational System Development</b>	<b>0305111F WEATHER SERVICE</b>	<b>2738</b>			
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U) \$1,799	OS-21: Develop remote weather sensor systems (Weather Data Collection)				
(U) \$1,500	WDA: Continue software development and integration of analysis infrastructure components (Analysis)				
(U) \$1,800	Forecasting: Continue integration of advanced weather forecast capabilities within AFW Strategic Center (Forecasting)				
(U) \$3,739	SWAFS: Continue software development for incremental deliveries (Forecasting)				
(U) \$5,650	PT/WA: Continue software development and integration of regional and tactical weather systems and integration with warfighter C4I systems (Product Tailoring/Warfighter Applications)				
(U) \$14,488	Total				
<b>(U) <u>B. Budget Activity Justification</u></b>					
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.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		19,942	11,452	14,588	TBD
(U) Appropriated Value		19,942	11,452		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions			-250		
b. Small Business Innovative Research		-700			
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram					
e. Rescissions		-185			
(U) Adjustments to Budget Years Since FY 2002 PBR				-100	TBD
(U) Current Budget Submit/FY 2003 PBR		19,057	11,202	14,488	TBD
<b>(U) <u>Significant Program Changes:</u></b>					
N/A					

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305111F WEATHER SERVICE</b>				PROJECT <b>2738</b>			
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) Other Procurement, AF, Weather Service (PE35111F WSC 833070 & 838010)	35,869	44,769	50,159	45,073	46,161	46,954	47,897	Continuing	TBD		
<b>(U) <u>E. Acquisition Strategy</u></b>											
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.											
<b>(U) <u>F. Schedule Profile</u></b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) CDFS II FOC									X		
(U) GTWAPS FOC							*				
(U) Forecasting Milestone B/C				*							
(U) WDA Milestone B/C				*							
(U) SWAFS Spiral 1								X			
* - Denotes completed event											
X - Denotes planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305111F WEATHER SERVICE</b>				<b>2738</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Software Integration					1,579		1,429		1,878	
(U)	System Engineering Support					3,413		1,044		1,308	
(U)	Contractor Engineering Support					1,805		275		1,096	
(U)	Software Development					10,977		7,165		8,948	
(U)	Travel					287		213		182	
(U)	Program Management Support					946		1,026		1,026	
(U)	Laboratory Support					50		50		50	
(U)	Total					19,057		11,202		14,488	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Product Development Organizations</u>											
Sterling	CPAF	Jun 95	21,621	21,621	21,589	5,331	390	0	0	27,310	
CCPL (TRW)	LOE	Dec 97	4,988	4,988	5,018	900	0	0	0	5,918	
Raytheon	MIPR	Sep 98	1,184	1,184	1,017	367	0	0	0	1,384	
CCPL (TRW/Raytheon)	LOE	Mar 00	TBD	TBD	2,813	3,795	3,937	0	Continuing	TBD	
Coastal Environmental	CFFP	Aug 01	327	327	327	114	0	1,283	Continuing	TBD	
CCPL (TRW/Raytheon)	LOE	Jan 00	1,267	1,267	202	1,066	0	0	0	1,268	
TBD [WDA]	TBD	TBD	TBD	TBD	0	0	2,298	1,069	Continuing	TBD	
TBD [PT/WA]	TBD	TBD	TBD	TBD	0	0	0	4,056	Continuing	TBD	
CCPL (TRW/Raytheon)	LOE	Dec 99	4,780	4,780	10,123	3,577	1,856	3,057	Continuing	TBD	
AFRL	LOE	Sep 00	339	339	189	50	50	50	Continuing	TBD	
TBD [Forecasting]	TBD	TBD	TBD	TBD	0	0	1,178	1,800	Continuing	TBD	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305111F WEATHER SERVICE		PROJECT 2738			
<b>(U) Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
Electronic Systems Center (ESC)	642	659	838	838	Continuing	TBD			
Space and Missile Systems Center (SMC)	479	389	216	185	Continuing	TBD			
MITRE/Aerospace/ITSP	2,186	2,809	439	2,150	Continuing	TBD			
<u>Test and Evaluation Organizations</u>									
<b>(U) Government Furnished Property:</b>									
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
N/A				0	0	0	0	0	0
<u>Support and Management Property</u>									
N/A				0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
N/A				0	0	0	0	0	0
<u>Subtotals</u>				<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Subtotal Product Development				41,278	15,200	9,709	11,315	TBD	TBD
Subtotal Support and Management				3,307	3,857	1,493	3,173	TBD	TBD
Subtotal Test and Evaluation				0	0	0	0	0	0
Total Project				44,585	19,057	11,202	14,488	TBD	TBD



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)						
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		46,098	26,595	9,865	5,875	5,977	6,092	6,207	Continuing	TBD
2026	System Support	249	0	0	0	0	0	0	0	1,497
3587	Air Traffic Control Systems	45,849	26,595	9,865	5,875	5,977	6,092	6,207	Continuing	TBD
Quantity of RDT&E Articles		5	0	0	0	0	0	0	0	0
<p>(U) <b>A. Mission Description</b>                      The focus of this program is a comprehensive modernization of fixed and mobile Air Traffic Control and Landing Systems (ATCALs) that will bridge the gap between the current aging fleet of ground-based ATCALs and future space-based infrastructure. In particular, it is focused on developing systems that increase commonality and interoperability, reduce manpower requirements, reduce logistics supportability problems, and posture the service to move to space-based aerospace navigation infrastructure when that becomes feasible and affordable (sometime after 2010). Additionally, this program investigates and exploits emerging technologies in critical ATCALs support areas such as air traffic controller training and terminal instrument procedures development. This program complements other safety of flight and airspace access programs such as Global Air Traffic Management and Global Access, Navigation, and Safety. Project 2026 funds ongoing liaison and interagency cooperative studies, between the USAF Air Traffic Control and Landing Systems program office and various organizations to include other Services, the Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO). Beginning in FY02, funding for Project 2026 will be contained in Project 3587. Project 3587 funds research and development of new air traffic control surveillance, positioning, and precision approach capabilities. This project funds the development of the Mobile Approach Control System (MACS) and Air Force Terminal Instrument Procedures-Replacement (AFTERPS-R).</p> <p>(U) <b>B. Budget Activity Justification</b>                      This program is in budget activity 7, Operational System Development, because it upgrades currently fielded weapon systems.</p>										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>	<b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>			
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	48,093	26,982	3,608	TBD
(U) Appropriated Value	48,093	26,982		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-387		
b. Small Business Innovative Research	-1,473			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-81			
e. Rescissions	-441			
(U) Adjustments to Budget Years Since FY 2002 PBR			6,257	
(U) Current Budget Submit/FY 2003 PBR	46,098	26,595	9,865	TBD
<b>(U) <u>Significant Program Changes:</u></b>				
FY03: Funds in the amount of \$6.3M were realigned from the procurement appropriation in order to insure adequate test resources for the Precision Approach Radar (PAR).				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>				PROJECT <b>2026</b>			
COST (\$ in Thousands)			FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2026	System Support		249	0	0	0	0	0	0	0	1,497
Beginning in FY02, funding for system support will be contained in Project 3587 vice Project 2026.											
<b>(U) A. Mission Description</b>											
This continuing effort funds ongoing liaison and interagency cooperative studies and interoperability analyses between the USAF Air Traffic Control and Landing Systems (ATCALs) Program Office and various organizations which include the other services, the Federal Aviation Administration (FAA), and the International Civil Aviation Organization (ICAO). This project provides Air Force mission support for the ATCALs programs including several joint efforts with the FAA. RDT&E funds are used to resolve or minimize technical interface problems associated with interoperability between existing or planned DoD/FAA ATCALs equipment and capabilities. This project ensures Air Force air traffic systems work collaboratively to provide safe and efficient Air Traffic Control services within the National Airspace System and in host nations overseas.											
<b>(U) FY 2001 (\$ in Thousands)</b>											
<b>(U) \$89</b> Support for all ATCALs projects											
<b>(U) \$111</b> Continue national and international air traffic system interoperability and interface evaluations											
<b>(U) \$49</b> Perform strategic planning for ATCALs deployment											
<b>(U) \$249</b> Total											
<b>(U) FY 2002 (\$ in Thousands)</b>											
<b>(U) \$0</b> No Activitiy											
<b>(U) \$0</b> Total											
<b>(U) FY 2003 (\$ in Thousands)</b>											
<b>(U) \$0</b> No Activity											
<b>(U) \$0</b> Total											
<b>(U) B. Project Change Summary</b>											
Beyond FY01, funding consolidated within PE 0305114F, Project 3587.											
Project 2026				Page 3 of 11 Pages				Exhibit R-2A (PE 0305114F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)				PROJECT 2026		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E									
(U)	Other APPN									
	N/A									
<b>(U) D. Acquisition Strategy</b>										
Engineering Manufacturing Development, Fixed Price Incentive Fee (FPIF), No Non-Developmental Items (NDI)										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2	3
(U)	Conduct Precision Landing Studies									
	* Denotes completed activity									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
07 - Operational System Development					0305114F Air Traffic Control/Approach/Landing System (ATCALs)			2026			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering					89		0		0	
(U)	Interface evaluations and architecture definitions					111		0		0	
(U)	Program Management Support					39		0		0	
(U)	Travel					10		0		0	
(U)	Total					249		0		0	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	N/A										
	<u>Support and Management Organizations</u>										
	Various	Multiple	Multiple	N/A	N/A	1,248	249	0	0	0	1,497
	<u>Test and Evaluation Organizations</u>										
	N/A										
<b>(U) Government Furnished Property:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 2002					
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT					
07 - Operational System Development	0305114F Air Traffic Control/Approach/Landing System (ATCALs)	2026					
<p>(U) <u>Government Furnished Property Continued:</u></p> <p><u>Support and Management Property</u> N/A</p> <p><u>Test and Evaluation Property</u> N/A</p>							
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>							
Subtotal Product Development							
Subtotal Support and Management		1,248	249	0	0	0	1,497
Subtotal Test and Evaluation							
Total Project		1,248	249	0	0	0	1,497

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>	<b>PROJECT</b> <b>3587</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3587      Air Traffic Control Systems	45,849	26,595	9,865	5,875	5,977	6,092	6,207	Continuing	TBD

(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 tell 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 2003-2007 will concentrate on deployment of the next generation of communications, navigation, and surveillance technologies and the automation upgrades necessary to accommodate new CNS capabilities. FY 2008-2015 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 predominately focus on aircraft issues.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$27,115              Continue MACS Air Surveillance Radar and Operation Shelter Development
- (U) \$16,515              Continue MACS Precision Approach Radar Development
- (U) \$664                      Continue the support of field activities to ensure USAF ATC interoperability with FAA and NATO
- (U) \$1,555                  Continue development of Air Force Terminal Instrument Procedures System
- (U) \$45,849                Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>			PROJECT <b>3587</b>			
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>										
(U)	\$8,849	Continue MACS Air Surveillance Radar and Operation Shelter Development								
(U)	\$15,698	Continue MACS Precision Approach Radar Development								
(U)	\$799	Complete development of Air Force Terminal Instrument Procedures System								
(U)	\$1,249	Continue support for all ATCALs Projects								
(U)	\$26,595	Total								
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>										
(U)	\$4,189	Complete MACS Air Surveillance Radar and Operation Shelter Development								
(U)	\$4,449	Continue MACS Precision Approach Radar Development								
(U)	\$1,227	Continue support for all ATCALs Projects								
(U)	\$9,865	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
FY03: Funds in the amount of \$6.3M were realigned from the procurement appropriation in order to insure adequate test resources for the Precision Approach Radar (PAR).										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E									
(U)	Other APPN									
(U)	OPAF - BA 3 (PE 305114F)	7,979	4,698	52,387	83,346	84,571	11,652	1,490	Continuing	TBD
	Weapon System Code 833010									
(U)	OPAF, BA 3, (PE 305137F)	55,340	71,930	55,934	44,120	41,258	57,807	64,976	Continuing	TBD
	Weapon System Code 833020									
(U)	OPAF, BA 5, (PE 305137F)	4,907	5,258	4,379	3,756	3,997	4,137	4,220	Continuing	TBD
	Weapon System Code									
Project 3587		Page 8 of 11 Pages					Exhibit R-2A (PE 0305114F)			



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305114F Air Traffic Control/Approach/Landing System (ATCALs)				PROJECT 3587	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
86190A Initial Spares									
(U) MILCON, AF	0	0	0	0	0	0	0	0	0
<b>(U) D. Acquisition Strategy</b>									
Engineering Manufacturing Development, Fixed Price Incentive Fee (FPIF), No Non-Developmental Items (NDI)									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) Contract Milestones									
(U) PAR Contract Award								*	
(U) ASR/OPS Contract Award			*						
(U) ASR/OPS Operational Testing									X
(U) AFTERPS-R Contract Award					*				
* Denotes completed activity									
X Denotes scheduled activity									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305114F Air Traffic Control/Approach/Landing System (ATCALs)</b>				<b>3587</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	MACS Air Surveillance Radar (ASR) and Operation Shelter development				27,115		8,849			4,189
(U)	MACS Precision Approach Radar (PAR) Development				16,515		15,698			4,449
(U)	Studies/field/integration activities to support on-going Air Traffic Control				499		1,074			1,102
(U)	AFTERPS-R development				1,555		799			0
(U)	Government Program Management Support and Travel for ATCALs activities				165		175			125
(U)	Total				45,849		26,595			9,865
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
AFTERPS-R - Canadian Commercial Corp	FPAF	Apr 01	N/A	N/A	850	1,555	799		Continuing	TBD
MACS PAR Development - Lockheed Martin	FPIF	Jun 00	N/A	N/A	1,519	7,407			Continuing	TBD
ASR and Operational Shelter Development - ITT Gilfillan	FPAF	Oct 00	N/A	N/A	0	21,840	8,471	3,687	Continuing	TBD
MITRE Corp	FFP	Oct 00	N/A	N/A	427	980	980	775	Continuing	TBD
Horizons Technology Inc.	FFP	Feb 99	N/A	N/A	1,427	1,818	1,067	1,011	Continuing	TBD
MCR Federal Inc.	FFP	Apr 99	N/A	N/A	550	200	200	125	Continuing	TBD
Raytheon Corp	FFP	July 96	N/A	N/A	668					668
Various TBD Contract	Multiple	Multiple	Continuing	Continuing	1,941	249	134	58	Continuing	TBD
Project 3587				Page 10 of 11 Pages				Exhibit R-3 (PE 0305114F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305114F Air Traffic Control/Approach/Landing System (ATCALs)				3587	
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
MACS Precision Approach	FFP	Jan 02	N/A	N/A	11,485	14,619	3,904			30,008
Radar (PAR) Development										
<u>Support and Management Organizations</u>										
Various	Multiple	Multiple	Continuing	Continuing	523	165	175	155	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing, Eglin AFB	PO	Multiple	N/A	N/A	627	150	150	150	Continuing	TBD
FL										
<b>(U) Government Furnished Property:</b>										
<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 2001</u>										
<u>FY 2001</u>										
<u>FY 2002</u>										
<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					7,382	45,534	26,270	9,560	TBD	TBD
Subtotal Support and Management					523	165	175	155	TBD	TBD
Subtotal Test and Evaluation					627	150	150	150	TBD	TBD
Total Project					8,532	45,849	26,595	9,865	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305128F Security And Investigative Activities</b>	<b>PROJECT</b> <b>1931</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1931 TECH SURVEIL COUNTER MEAS EQPT	443	467	475	483	492	501	511	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

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.

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.

Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
<b>07 - Operational System Development</b>	<b>0305128F Security And Investigative Activities</b>	<b>1931</b>			
<b>(U) <u>A. Mission Description Continued</u></b>					
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.					
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>					
(U) \$108	Next generation Technical Surveillance Countermeasures (TSCM) receiver. Continuing development of TSCM receiver software				
(U) \$25	Language translation software. Continuing development of document translation software.				
(U) \$30	Continuing development of Communications web portal				
(U) \$280	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software				
(U) \$443	Total				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U) \$275	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software				
(U) \$192	Next generation Technical Surveillance Countermeasures (TSCM) receiver. Continuing development of TSCM receiver Software. Also, the research and development of network countermeasures.				
(U) \$467	Total				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U) \$275	Next generation Technical Surveillance Countermeasures (TSCM) receiver. Continuing development of TSCM receiver Software.				
(U) \$200	Computer Crimes Investigative (CCI) Equipment. RDT&E of CCI Software.				
(U) \$475	Total				
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7, Operational System Development, because its products are primarily for use in investigative activity of an operational nature.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		467	472	476	TBD
(U) Appropriated Value		467	472		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions		-4	-5		
Project 1931	Page 2 of 6 Pages	Exhibit R-2 (PE 0305128F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>			<b>0305128F Security And Investigative Activities</b>				<b>1931</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>									
			<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>			
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 2002 PBR		-20		-1				
(U)	Current Budget Submit/FY 2003 PBR		443	467	475			TBD	
<b>(U) Significant Program Changes:</b>									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E								
(U)	Other APPN								
(U)	0	2,287	2,307	2,286	2,397	2,494	1,829	Continuing	
Equipment									
(U)	408	412	409	406	402	401	400	Continuing	
Radio Equipment									
(U)	0	0	0	0	0	0	0	0	
Base Communication Infrastructure									
(U)	0	0	0	0	0	0	0	0	
Base Procured Equipment									
(U)	2,948	4,205	4,057	4,070	4,132	4,146	4,084	Continuing	
Technical Surveillance Countermeasures Equipment									
(U) BA63/Security & Investigative Activities/PE0305128F									
<b>(U) E. Acquisition Strategy</b>									
All major contracts within this Program Element were awarded via sole source contract due to the sensitivity of technologies involved.									
Project 1931			Page 3 of 6 Pages			Exhibit R-2 (PE 0305128F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305128F Security And Investigative Activities</b>					<b>1931</b>				
<b>(U) <u>F. Schedule Profile</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) TSCM Receiver/Software Suite		*				X				X				
(U) Lanugage Translation Software				*										
(U) CCI Equipment				*			X				X			
(U) Information Technology				*										
* = completion, X = planned event														
Project 1931				Page 4 of 6 Pages				Exhibit R-2 (PE 0305128F)						



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305128F Security And Investigative Activities				PROJECT 1931		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Primary Hardware Development					0		0		
(U)	Software Development					443		467		475
(U)	Total					443		467		475
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
AF Infrastructure Protection					1,884	0			0	1,884
Studies										
<u>Product Development Organizations</u>										
Matrix Engineering	SS/FFP	Jan 01	N/A	N/A	339	108	192	275	Continuing	TBD
Army Research Lab	MIPR	Aug 01	N/A	N/A	150	25	0	0	Continuing	TBD
Sandia Natl Lab	MIPR	Apr 01	N/A	N/A	1,249	0	40	0	Continuing	TBD
AFWIC	MIPR	Jul 01	N/A	N/A	0	280	40	200	0	520
Other Agency	MIPR	Aug 00	N/A	N/A	175	0	195	0	Continuing	TBD
Los Alamos Natl Lab	MIPR	Oct 00	N/A	N/A	0	0	0	0	0	0
Maxwell AFB, AL	MIPR	Dec 00	N/A	N/A	0	30	0	0	0	30
<u>Support and Management Organizations</u>										
None										
<u>Test and Evaluation Organizations</u>										
None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>		<b>0305128F Security And Investigative Activities</b>				<b>1931</b>			
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
Solutions Engineering	C/FFP	Jun 99		0	0	0		0	0
Fedsim	SS/FFP	Aug 99		69	0	0		0	69
Lucent Tech	SS/FFP	Mar 99		91	0	0		0	91
<u>Subtotals</u>				<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
AF Infrastructure Protection Studies				1,884	0			0	1,884
Subtotal Product Development				1,913	443	467	475	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation				160	0	0		0	160
Total Project				3,957	443	467	475	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305144F TITAN SPACE LAUNCH VEHICLES</b>	<b>PROJECT</b> <b>4135</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4135 Titan II/IV	21,496	21,080	0	0	0	0	0	0	3,011,297
Quantity of RDT&E Articles	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. 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 February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305144F TITAN SPACE LAUNCH VEHICLES</b>	<b>4135</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>				
(U) \$18,945	Completed Milstar 4 integration; continued Milstar 5 & 6 integration			
(U) \$2,551	Continued Titan II / Coriolis Space Test Program mission integration			
(U) \$21,496	Total			
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$18,831	Complete Milstar 5 integration, continue Milstar 6 integration			
(U) \$2,249	Continue Titan II / Coriolis Space Test Program mission integration			
(U) \$0	Note: Missions have moved into FY03 -- see footnote above.			
(U) \$21,080	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$0	No new activity planned (see FY02 description)			
(U) \$0	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
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.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	25,578	21,293		3,015,829
(U) Appropriated Value	25,815	21,293		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-181	-213		
b. Small Business Innovative Research	-130			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-3,952			
e. Rescissions	-56			
(U) Adjustments to Budget Years Since FY 2002 PBR				
Project 4135	Page 2 of 5 Pages	Exhibit R-2 (PE 0305144F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305144F TITAN SPACE LAUNCH VEHICLES</b>				<b>4135</b>			
<b>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></b>											
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>				
(U)	Current Budget Submit/FY 2003 PBR			21,496	21,080		3,011,297				
(U)	<u>Significant Program Changes:</u> FY 2001: Below Threshold Reprogramming (BTR) decrease to support higher Air Force priorities.										
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>											
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	MPAF, Space Programs, (BA 05, PE 0305144F, P-27)			392,981	350,196	335,303	7,890	6,757	0	0	6,561,549
<b>(U) <u>E. Acquisition Strategy</u></b>											
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 combine 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.											
<b>(U) <u>F. Schedule Profile</u></b>											
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
				1	2	3	4	1	2	3	4
(U)	Milstar launches (Final launch Nov 02)				*			X		X	
(U)	Final Titan II launch (STP/Coriolis)									X	
(U)	Final Titan IV launch (DSP-22)										X
	*completed event				X	planned event					
Project 4135				Page 3 of 5 Pages				Exhibit R-2 (PE 0305144F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0305144F TITAN SPACE LAUNCH VEHICLES</b>			<b>4135</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Contract Costs Unified Payload Integration					21,496	20,655	0		
(U)	Facility Support					0	425	0		
(U)	Total					21,496	21,080	0		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
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	42,209	21,496	20,655	0	0	84,360
Facilities	n/a	n/a			6,993	0	425	0	0	7,418
NOTE: EAC are total contract values while funding values are AF funds only										
* Contract closed										
** Contracts inactive										
*** Includes both RDT&E and Procurement funding										
<u>Support and Management Organizations</u>										
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

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0305144F TITAN SPACE LAUNCH VEHICLES			4135		
(U) <u>Performing Organizations Continued:</u>									
<u>Test and Evaluation Organizations</u>									
None									
(U) <u>Government Furnished Property:</u>									
	<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>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				2,482,908	21,496	21,080	0	0	2,525,484
Subtotal Support and Management				485,813	0	0	0	0	485,813
Subtotal Test and Evaluation									
Total Project				2,968,721	21,496	21,080	0	0	3,011,297

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305148F AF Tac Measurement & Sign				PROJECT 5053		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5053	ARGUS	0	0	6,486	10,449	11,238	4,681	3,269	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>1. In FY02 (Steel Eagle ARGUS) received \$15.0M as part of the Defense Emergency Relief Fund (DERF). These funding procured an additional 25 sensors and provided seed funding for the ARGUS program in support of ENDURING FREEDOM. These dollars are not reflected in the FY02 program total. Air Force Tactical Measurement and Signatures is a FY 2003 new start effort.</p> <p>2. In FY03 AF Tac Measurement &amp; Sign anticipates receiving \$9M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used for Advanced Remote Ground Unattended Sensor (ARGUS).</p> <p>(U) <b>A. Mission Description</b>            This program encompasses development and Low Rate Initial Production (LRIP) of the Joint Requirements Oversight Council (JROC) approved Advanced Remote Ground Unattended Ground Sensor (ARGUS). Each sensor is self-contained with internal battery power, 2-way satellite communication transceiver, sensor suite, signal processing, and Global Positioning System. ARGUS is designed for 24/7 operations in worldwide geographic and climate conditions and can be air delivered or hand emplaced. ARGUS provides joint forces and other commanders with MASINT (Measurement and Signatures Intelligence) derived information on designated, high-priority, mobile enemy systems autonomously. In addition it will provide cueing for wide area sensors on Intelligence, Surveillance &amp; Reconnaissance (ISR) platforms such as the JSTARS, Predator, U-2, or Global Hawk. Funding completes acquisition plan, engineering and manufacturing development in FY03 and LRIP in FY04. Also, funds Operational Testing &amp; Evaluation (OT&amp;E)/Developmental Testing &amp; Evaluation (DT&amp;E) and initiates LRIP contract phase in FY05.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u>            (U) \$0 No Activity            (U) \$0 Total</p>										
Project 5053			Page 1 of 5 Pages				Exhibit R-2 (PE 0305148F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																								
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305148F AF Tac Measurement &amp; Sign</b>		PROJECT <b>5053</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$1,080                      Program Management</p> <p>(U) \$220                        Development, Testing &amp; Engineering (DT&amp;E)</p> <p>(U) \$200                        Simulation Support</p> <p>(U) \$750                        Ballistics Testing</p> <p>(U) \$4,236                     Engineering, Manufacturing &amp; Development (EMD)</p> <p>(U) \$6,486                     Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>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) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>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 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">6,486</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: center;">6,486</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2002 PBR			6,486		(U) Current Budget Submit/FY 2003 PBR			6,486	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																						
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(U) Current Budget Submit/FY 2003 PBR			6,486	TBD																																																						
Project 5053	Page 2 of 5 Pages	Exhibit R-2 (PE 0305148F)																																																								

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305148F AF Tac Measurement &amp; Sign</b>			PROJECT <b>5053</b>			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E										
(U) Other APPN										
(U) 3400						2,380	3,350		5,730	
<b>(U) E. Acquisition Strategy</b>										
Proposals will be solicited for initial development and prototype design through open and competitive bid contract type TBD. Procurement of ARGUS Block I development production systems will be awarded as a Firm Fixed Price (FFP) contract.										
<b>(U) F. Schedule Profile</b>										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) EMD Contract Award								X		
(U) Ballistics Testing									X	
(U) DT&E										X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305148F AF Tac Measurement &amp; Sign</b>				<b>5053</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Ballistics Testing									750	
(U)	DT&E									220	
(U)	Simulation Support									200	
(U)	EMD									4,236	
(U)	Program Mangement									1,080	
(U)	Total									6,486	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	ESC	TBD	TBD						6,486	Continuing	TBD
	<u>Support and Management Organizations</u>										
	<u>Test and Evaluation Organizations</u>										
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>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 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305148F AF Tac Measurement &amp; Sign</b>			<b>5053</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		to FY 2001	FY 2001	FY 2002	FY 2003	Complete
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development				6,486	TBD
	Subtotal Support and Management					TBD
	Subtotal Test and Evaluation					TBD
	Total Project				6,486	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305160F Defense Meteorological Satellite Program</b>	PROJECT <b>4758</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4758 DMSP Program	22,129	11,871	3,875	2,223	2,114	2,144	2,204	0	904,338
Quantity of RDT&E Articles	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 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). Presidential Decision Directive PDD/NSTC-2 directed convergence of DMSP with the National Oceanic and Atmospheric Administration's (NOAA) POES polar-orbiting weather satellite system. A key step towards full program convergence was achieved in FY98 when DMSP satellite operations consolidated with NOAA satellite operations at NOAA's Suitland, MD, Satellite Operations Control Center (SOCC). 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 (satellite and sensors) and will be the last DMSP to launch on a Titan-II booster currently scheduled to launch in February of 2002. The remaining DMSP satellites, F-17 through F-20, are all manifested to launch on an Evolved Expendable Launch Vehicle (EELV) booster. The Spacecraft Integration & Test (SIT) contract award for spacecraft support will be issued in 3QFY02. The Independent Verification & Validation contract award for test flight software will be issued in 4QFY02.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$11,467            Continued system integration and test, and related support activities
  - (U) \$1,191            Completed Titan II integration effort
  - (U) \$3,601            Continued EELV interface design (transition to EELV)
  - (U) \$1,701            Completed integration studies and test analysis to retrofit DMSP satellites with solid state recorders (SSRs)
  - (U) \$4,169            DMSP Block 5D3 Sensor calibration and validation (previously SSMIS Cal/Val and a portion of continue system integration and test, and related support activities)
  - (U) \$22,129           Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305160F Defense Meteorological Satellite Program</b>		<b>4758</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$8,064	Continue system integration and test, and related support activities			
(U)	\$342	Continue EELV interface design (transition to EELV)			
(U)	\$3,465	Continue 5D3 Sensor calibration and validation (previously SSMIS Cal/Val and a portion of continue system integration and test, and related support activities)			
(U)	\$11,871	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U)	\$1,921	Continue system integration and test, studies, and related support activities			
(U)	\$283	Complete EELV interface design (transition to EELV)			
(U)	\$1,671	Continue 5D3 Sensor calibration and validation (previously SSMIS Cal/Val and a portion of continue system integration and test, and related support activities)			
(U)	\$3,875	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7, Operational Systems Development, because it supports the current operational DMSP constellation.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	25,139	12,259	7,892	936,598
(U)	Appropriated Value	25,372	12,259		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-178	-388		
	b. Small Business Innovative Research	-786			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-2,224			
	e. Rescissions	-55			
(U)	Adjustments to Budget Years Since FY 2002 PBR			-4,017	-32,260
(U)	Current Budget Submit/FY 2003 PBR	22,129	11,871	3,875	904,338
Project 4758		Page 2 of 7 Pages		Exhibit R-2 (PE 0305160F)	



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305160F Defense Meteorological Satellite Program</b>			PROJECT <b>4758</b>																																																											
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b></p> <p>(U) <b><u>Significant Program Changes:</u></b>                  Funding: FY03 funds Zero Balance Transferred from RDT&amp;E to Missile Procurement (Project 674758) for DMSP program management support.</p> <p>Schedule: Next satellite launch (F-16) scheduled TBD.</p> <p>Technical: None</p> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></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>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>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</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> </tr> <tr> <td>(U) Missile Procurement/PE 0305160F (Budget Activity 5, Line Item P-27)</td> <td style="text-align: right;">70,888</td> <td style="text-align: right;">45,668</td> <td style="text-align: right;">60,051</td> <td style="text-align: right;">61,776</td> <td style="text-align: right;">57,442</td> <td style="text-align: right;">52,393</td> <td style="text-align: right;">53,972</td> <td style="text-align: right;">77,201</td> <td style="text-align: right;">2,446,485</td> </tr> </tbody> </table> <p>Related RDT&amp;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)</p> <p>(U) <b><u>E. Acquisition Strategy</u></b>                  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 remaining DMSP satellites to be launched has been completed. The program is focused on successful completion of current contracts, award of follow-on Spacecraft Integration &amp; Test and Independent Verification &amp; Validation contracts, plus contractor support for spacecraft, sensors, and ground systems already procured. Remaining effort is to continue integration of sensors and to successfully launch remaining DMSP satellites.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="width:25%;"><u>FY 2001</u></th> <th style="width:25%;"><u>FY 2002</u></th> <th style="width:25%;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN										(U) Missile Procurement/PE 0305160F (Budget Activity 5, Line Item P-27)	70,888	45,668	60,051	61,776	57,442	52,393	53,972	77,201	2,446,485		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																									
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																										
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Project 4758			Page 3 of 7 Pages			Exhibit R-2 (PE 0305160F)																																																												

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002						
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT						
<b>07 - Operational System Development</b>					<b>0305160F Defense Meteorological Satellite Program</b>					<b>4758</b>						
<b>(U) <u>F. Schedule Profile Continued</u></b>																
					<u>FY 2001</u>						<u>FY 2002</u>					
					1	2	3	4	1	2	3	4	1	2	3	4
(U)	Tactical Terminal Program funding transferred to AF Weather Agency				*											
(U)	F-16 Satellite Launch (Next launch, F-17 planned in Feb 04)									X						
(U)	SIT Contract Award										X					
(U)	IV&V Contract Award												X			
(U)	Completion of EELV interface design													X		
	* = Completed event															
	X = Planned event															
Project 4758					Page 4 of 7 Pages					Exhibit R-2 (PE 0305160F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0305160F Defense Meteorological Satellite Program</b>			<b>4758</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Launch Vehicle Transition					4,792		342		283
(U)	Spacecraft Integration and Test					6,624		1,790		1,164
(U)	Sensor Suite Calibration/Validation					4,169		3,465		1,671
(U)	Algorithm Development					210		0		0
(U)	Systems Engineering Support*					3,777		3,507		757
(U)	Program Management Support*					2,557		2,767		0
(U)	Total					22,129		11,871		3,875
* Program Management and a portion of Systems Engineering Support transferred to Missile Procurement beginning in FY03.										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</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	13,223	13,223	5,015	3,908	928	555	2,817	13,223
Northrop-Grummn (CSS&S)	SS/CPAF	May 95	15,772	15,772	5,734	5,480	1,204	502	2,852	15,772
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	4,077	1,191			0	5,268
Boeing (EELV Msn Unique Studies)	SS/CPAF	May 00	472	472	472				0	472
Boeing (EELV Msn Unique Studies)	SS/CPAF	Jul 00	545	545	545				0	545

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>				<b>0305160F Defense Meteorological Satellite Program</b>			<b>4758</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>								
<u>Product Development Organizations</u>								
Studies & Services)								
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
Raytheon, formerly Hughes (SSMI Spt & Svc)	SS/CPFF	May 96	236	236	236		0	236
AFRL	MIPR/PD	Oct 95		5,214	75	498	0	5,787
NRL	MIPR/Var	Oct 95		9,560	3,261	1,300	1,127	0 15,248
APL	MIPR/Var	Oct 95		3,483	55	270	0	3,808
SMC (Det 3 SSSG/NPOESS)	FCA/MIPR	Dec 95		2,506			0	2,506
Sandia	MIPR/Var	Oct 96		620	200		0	820
NOAA					34		0	34
Other	Various			3,018	1,591	2,165	166	0 6,940
Historical Satellite Blocks	Various			583,786				583,786
<u>Support and Management Organizations</u>								
FFRDC	AF 277	Oct 95		20,500	2,647	1,951	757	3,016 28,871
PRC/BD Systems/TASS	C/CPAF	Aug 95		7,012	1,130	1,556	0	9,698
Program Mgmt				18,131	2,557	2,767	0	23,455
Litigation Support				1,809			0	1,809
Other	Various	Jul 91		1,958			0	1,958
Historical Satellite Blocks	Various			38,530			0	38,530
<u>Test and Evaluation Organizations</u>								
NONE								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305160F Defense Meteorological Satellite Program			PROJECT 4758	
<b>(U) Government Furnished Property:</b>								
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development				769,838	15,795	5,597	3,118	5,669
Subtotal Support and Management				87,940	6,334	6,274	757	3,016
Subtotal Test and Evaluation								
Total Project				857,778	22,129	11,871	3,875	8,685
								<u>Total</u>
								<u>Program</u>
								800,017
								104,321
								904,338

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System User Equipment Space</b>
<b>PROJECT</b> <b>3028</b>	

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3028 Navstar GPS	60,330	52,541	86,799	60,981	61,595	64,415	70,062	Continuing	TBD
Quantity of RDT&E Articles	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, antennae, 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 2001 (\$ in Thousands)**

(U) \$16,107	Continued advanced UE technology effort
(U) \$17,478	Continued Selective Availability Anti-Spoofing Module (SAASM)/GPS Receiver Application Module (GRAM)-SAASM/development
(U) \$2,332	Continued Integration, Test and Evaluation
(U) \$275	Completed ACTD (Protection) objectives under Joint GPS Combat Evaluation (JGPSCE)
(U) \$7,132	Continued System Engineering and Support
(U) \$8,962	Continued Modernization efforts (M-Code Development)
(U) \$8,044	Continued classified requirement
(U) \$60,330	Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																													
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System User Equipment Space</b>																																																														
<b>PROJECT</b> <b>3028</b>																																																															
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">(U) \$14,577</td> <td>Continue Advanced UE Technology efforts</td> </tr> <tr> <td>(U) \$17,177</td> <td>Continue SAASM/GRAM-SAASM development</td> </tr> <tr> <td>(U) \$2,668</td> <td>Continue Integration, Test and Evaluation</td> </tr> <tr> <td>(U) \$5,919</td> <td>Continue System Engineering and Support</td> </tr> <tr> <td>(U) \$10,200</td> <td>Continue Modernization efforts (M-Code Development)</td> </tr> <tr> <td>(U) \$2,000</td> <td>Complete classified requirement</td> </tr> <tr> <td>(U) \$52,541</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: 15%;">(U) \$18,853</td> <td>Continue Advance UE Technology efforts</td> </tr> <tr> <td>(U) \$15,082</td> <td>Continue SAASM/GRAM-SAASM development</td> </tr> <tr> <td>(U) \$7,211</td> <td>Continue Integration, Test and Evaluation</td> </tr> <tr> <td>(U) \$12,321</td> <td>Continue System Engineering and Support</td> </tr> <tr> <td>(U) \$33,332</td> <td>Continue Modernization efforts (M-Code Development)</td> </tr> <tr> <td>(U) \$86,799</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b> This program element is in Budget Activity 7 - Operational System Development, because UE passed Milestone IIB in January 1992.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">66,360</td> <td style="text-align: center;">53,093</td> <td style="text-align: center;">57,035</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">66,975</td> <td style="text-align: center;">53,093</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;">-469</td> <td style="text-align: center;">-552</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-4,377</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-800</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			(U) \$14,577	Continue Advanced UE Technology efforts	(U) \$17,177	Continue SAASM/GRAM-SAASM development	(U) \$2,668	Continue Integration, Test and Evaluation	(U) \$5,919	Continue System Engineering and Support	(U) \$10,200	Continue Modernization efforts (M-Code Development)	(U) \$2,000	Complete classified requirement	(U) \$52,541	Total	(U) \$18,853	Continue Advance UE Technology efforts	(U) \$15,082	Continue SAASM/GRAM-SAASM development	(U) \$7,211	Continue Integration, Test and Evaluation	(U) \$12,321	Continue System Engineering and Support	(U) \$33,332	Continue Modernization efforts (M-Code Development)	(U) \$86,799	Total		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	66,360	53,093	57,035	TBD	(U) Appropriated Value	66,975	53,093			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-469	-552			b. Small Business Innovative Research	-4,377				c. Omnibus or Other Above Threshold Reprogram	-800			
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305164F NAVSTAR Global Positioning System User Equipment Space</b>				<b>3028</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			<u>Total Cost</u>	
	d. Below Threshold Reprogram			-854						
	e. Rescissions			-145						
(U)	Adjustments to Budget Years Since FY 2002 PBR				0	29,764				
(U)	Current Budget Submit/FY 2003 PBR			60,330	52,541	86,799			TBD	
(U)	<u>Significant Program Changes:</u> FY03 adjustment of \$9,926K to realign technical support funds with associated user equipment RDT&E efforts and \$19,838K for accelerated M-code.									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
(U)	Operations and Maintenance (PE 0305164F, BA 1 - Operating Forces, SAG 13D)	1,677	1,347	1,838	6,183	6,153	6,356	6,502	Continuing	Continuing
(U)	Aircraft Procurement (PE 0305164F, BA 7, Aircraft Support Equipment, BP19, P-74)	36,933	29,074	17,619	39,422	55,633	67,432	58,018	Continuing	Continuing
(U)	Other Procurement (PE 0305164F, BP 63 - Electronics & Telecommunications Equipment, WSC 6730, P-62)	1,637	3,975	4,257	4,324	4,325	4,702	1,043	Continuing	Continuing
(U)	Other Procurement (PE 0305164F, BP 86 - Spares &	0	381	85	388	0	0	0	0	854
Project 3028		Page 3 of 9 Pages						Exhibit R-2 (PE 0305164F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>											DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>						PE NUMBER AND TITLE <b>0305164F NAVSTAR Global Positioning System User Equipment Space</b>						PROJECT <b>3028</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>														
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
Repair Parts, WSC 190A, P-101)														
<b>(U) Related RDT&amp;E:</b>														
<b>(U) PE 0305165F, NAVSTAR GPS (Space/Ground Segments)</b>														
<b>(U) PE 0603421, NAVSTAR GPS (GPS III)</b>														
<b>(U) PE 0305176F, Combat Survivor/Evader Locator</b>														
<b>(U) E. Acquisition Strategy</b>														
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 Application Module (GRAM) concept. The GRAM-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. Additionally, conduct a study to develop a low end and high end handheld receivers as the first part of a two step acquisition approach (a PRDA followed by a production contract).														
<b>(U) F. Schedule Profile</b>														
			<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
			1	2	3	4	1	2	3	4	1	2	3	4
<b>(U) GRAM-SAASM ICD complete</b>														
<b>(U) GRAM-SAASM preproduction prototypes deliveries</b>														
<b>(U) Begin M-Code receiver development</b>														
<b>(U) M-Code Receiver Acquisition Start Approval</b>														
Project 3028														
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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE  
**February 2002**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305164F NAVSTAR Global Positioning System User</b>	<b>PROJECT</b> <b>3028</b>
<b>Equipment Space</b>		

**(U) F. Schedule Profile Continued**

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin M-Code System Development & Demonstration (SSD)									X			
(U) Adv UE Technology - Digital AE upgrade CDR											X	
(U) Adv UE Tech - Small antenna prototype development completion							X					
(U) Adv UE Tech - Filter (AE-1 FF Applique Development Completion)				*								
(U) Begin Handheld study		*										
(U) Complete Handheld study							X					
(U) K-10/F-15 SAASM NRE												X
(U) GRAM-SAASM Avionics Development Complete											X	

\* = Completed, X = Scheduled

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0305164F NAVSTAR Global Positioning System User</b>			<b>3028</b>		
					<b>Equipment Space</b>					
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Advanced UE Technology effort					16,107	14,577	18,853		
(U)	SAASM/GRAM-SAASM development					17,478	17,177	15,082		
(U)	Integration, Test and Evaluation					2,332	2,668	7,211		
(U)	ACTD (Protection) objectives under JGPSCE demo					275	0	0		
(U)	System engineering and support					7,132	5,919	12,321		
(U)	Modernization (M-Code Development)					8,962	10,200	33,332		
(U)	Classified Requirement					8,044	2,000	0		
(U)	Total					60,330	52,541	86,799		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>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	16,922	3,023	0	6,021	Continuing	TBD
NAWC (SAASM)	MIPR	Oct 95	599	599	599	0	0	0	0	599
Various (SAASM)	Various	Various	N/A	N/A	11,199	5,322	5,334	4,593	Continuing	TBD
Various (M-Code)	Various	Dec 00	N/A	N/A	0	8,962	10,200	33,332	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	3,860	659	629	641	Continuing	TBD
Project 3028										
Page 6 of 9 Pages										
Exhibit R-3 (PE 0305164F)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
										February 2002
BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT
07 - Operational System Development				0305164F NAVSTAR Global Positioning System User Equipment Space						3028
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
General Dynamics (Various)	Time and Materials	Jan 96	1,810	1,810	1,810	0	0	0	0	1,810
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	19,811	275	0	0	0	20,086
Adv UE Protection Dev	Various	Various	20,691	20,691	1,810	7,703	7,601	4,253	0	21,367
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	14,235	8,044	2,000	0	0	24,279
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 (Handheld PRDA)	PRDA	Jan 01	13,645	13,645	0	10,622	5,776	10,752	Continuing	TBD
Various (GRAM-SAASM)	PRDA	Jul 98	27,469	27,469	25,169	1,430	4,242	0	0	30,841
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	3,218	1,020	3,145	2,447	Continuing	TBD
Anti-jam Filter Technology	Various	Various	N/A	N/A	150	450	1,700	1,000	Continuing	TBD
Advanced Antenna Technology	Various	Various	N/A	N/A	2,722	4,015	3,956	4,654	Continuing	TBD
<u>Support and Management Organizations</u>										
Overlook Sys (OASD/C3I)	C/CPFF	Dec 95	N/A	N/A	18,962	3,335	3,444	0	0	25,741
Aerospace Corp (Technical Supt)	CPFF	Various	N/A	N/A	3,040	2,112	681	3,345	Continuing	TBD
SMC/FMB	Various	Various	N/A	N/A	5,832	677	942	960	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
07 - Operational System Development										0305164F NAVSTAR Global Positioning System User 3028 Equipment Space
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
(Shared Prg Cost)										
PRC (Technical Supt)	Time and Materials	Dec 95	714	714	714	0	0	0	0	714
Miscellaneous (In-house support)	Various	Various	N/A	N/A	4,840	1,008	852	8,231	Continuing	TBD
Various (Other Navwar Studies)	Various	Various	2,375	2,375	2,375	0	0	0	0	2,375
<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	6,954	1,673	2,039	6,570	Continuing	TBD
<b>(U) Government Furnished Property:</b>										
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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										
Project 3028			Page 8 of 9 Pages				Exhibit R-3 (PE 0305164F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0305164F NAVSTAR Global Positioning System User Equipment Space			3028	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development		171,061	51,525	44,583	67,693	TBD
Subtotal Support and Management		35,763	7,132	5,919	12,536	TBD
Subtotal Test and Evaluation		38,941	1,673	2,039	6,570	TBD
Total Project		245,765	60,330	52,541	86,799	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002															
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305165F NAVSTAR GPS (Space)				PROJECT 3030															
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost														
3030 NAVSTAR GPS (Space & Control)	241,163	178,655	324,098	174,163	99,415	106,183	80,093	Continuing	TBD														
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0														
<p>(U) <b><u>A. Mission Description</u></b>            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&amp;D efforts to support the entire GPS system deployment. This Program Element (PE) funds the Research and Development (R&amp;D) for modernization and future GPS systems including efforts to provide anti-jam capability through increased M-Code signal power, as soon as practical.</p> <p>GPS Block IIF satellites and up to 10 Block IIR satellites will be modified to include a second civil signal and new military signal. Block IIF satellites will also include a third civil signal (L5). A new GPS Block III program was initiated after new start approval in August 2000 to incorporate a higher power military signal to provide enhanced anti-jam capability, the second and third civil signals, and the new military signal.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$21,192</td> <td>Continued system engineering and spectrum/frequency management</td> </tr> <tr> <td>(U) \$6,529</td> <td>Continued IIF satellite development</td> </tr> <tr> <td>(U) \$121,050</td> <td>Continued GPS Modernization for Space (for all IIF and IIR satellites and future GPS III satellites)</td> </tr> <tr> <td>(U) \$67,975</td> <td>Continued Operational Control Segment (OCS) development</td> </tr> <tr> <td>(U) \$19,717</td> <td>Continued OCS modernization</td> </tr> <tr> <td>(U) \$4,700</td> <td>Continued GPS stewardship</td> </tr> <tr> <td>(U) \$241,163</td> <td>Total</td> </tr> </table>										(U) \$21,192	Continued system engineering and spectrum/frequency management	(U) \$6,529	Continued IIF satellite development	(U) \$121,050	Continued GPS Modernization for Space (for all IIF and IIR satellites and future GPS III satellites)	(U) \$67,975	Continued Operational Control Segment (OCS) development	(U) \$19,717	Continued OCS modernization	(U) \$4,700	Continued GPS stewardship	(U) \$241,163	Total
(U) \$21,192	Continued system engineering and spectrum/frequency management																						
(U) \$6,529	Continued IIF satellite development																						
(U) \$121,050	Continued GPS Modernization for Space (for all IIF and IIR satellites and future GPS III satellites)																						
(U) \$67,975	Continued Operational Control Segment (OCS) development																						
(U) \$19,717	Continued OCS modernization																						
(U) \$4,700	Continued GPS stewardship																						
(U) \$241,163	Total																						
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 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0305165F NAVSTAR GPS (Space)</b>	<b>3030</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>				
(U) \$8,000	Continue system engineering and spectrum/frequency management			
(U) \$5,036	Continue IIF satellite development			
(U) \$63,278	Continue GPS Modernization for Space (for IIF and IIR satellites; GPS III funds transferred to PE 0603421F)			
(U) \$59,545	Continue OCS development			
(U) \$42,796	Continue OCS modernization			
(U) \$178,655	Total			
GPS Stewardship transferred to PE 0603421F				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$8,864	Continue system engineering and spectrum/frequency management			
(U) \$4,173	Continue IIF satellite development			
(U) \$128,557	Continue GPS Modernization for Space (for IIF and IIR satellites) and enhanced anti-jam capabilities			
(U) \$60,404	Continue OCS development			
(U) \$122,100	Continue OCS modernization			
(U) \$324,098	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This program is in Budget Activity 7 - Operational Systems Development because it is a post-Milestone III program.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	258,952	186,459	206,960	TBD
(U) Appropriated Value	260,980	180,459		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-1,821	-1,804		
b. Small Business Innovative Research	-11,626			
c. Omnibus or Other Above Threshold Reprogram	-190			
d. Below Threshold Reprogram	-5,613			
e. Rescissions	-567			
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 2002								
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT						
<b>07 - Operational System Development</b>		<b>0305165F NAVSTAR GPS (Space)</b>		<b>3030</b>						
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>					
(U)	Adjustments to Budget Years Since FY 2002 PBR			117,138						
(U)	Current Budget Submit/FY 2003 PBR	241,163	178,655	324,098	TBD					
(U)	<u>Significant Program Changes:</u> In FY02, PE 030165F, Space & Control funds for GPS III were transferred to PE 0603421F. \$117,138K added in FY03 for GPS Modernization and OCS disconnects as well as pursuing enhanced anti-jam capabilities..									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	RDT&E (PE 0603421F, BA-4/R-38, Project 644993 - GPS Block III)	0	76,960	100,217	183,767	186,960	211,877	203,641	Continuing	TBD
(U)	Other APPN									
(U)	Operations and Maintenance (PE 0305165F, BA 1 - Operating Forces, SAG 13D)	47,251	49,365	60,009	60,155	60,585	62,138	65,594	Continuing	TBD
(U)	Missile Procurement (PE 0305165F, BA 5 - Space and Other Support, P-21, 22)	159,643	171,175	209,470	238,783	439,271	397,287	419,969	Continuing	TBD
(U)	Other Procurement (PE 0305165F, BP 83 - Electronics and Telecommunications Equipment, WSC 6790, P-68, and WSC 6730.) Related RDT&E	15,750	7,934	13,534	8,763	9,841	14,091	26,014	Continuing	TBD
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)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0305165F NAVSTAR GPS (Space)</b>			<b>3030</b>		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
PE 0305164F, GPS User Equipment									
PE 0305913F, Nuclear Detonation Detection System (NDS)									
<b>(U) E. Acquisition Strategy</b>									
GPS OCS upgrade was competitively awarded to a single contractor (Lockheed Martin) in July 1995. Block IIF satellite and IIF ground systems development contract was competitively awarded to a single contractor (Boeing) in April 1996. The Single Prime Initiative (SPI) consolidated these efforts and was added to the Boeing IIF contract (with Lockheed Martin as a subcontractor) on 1 Oct 99. GPS Modernization efforts for the Block IIR were awarded sole source to Lockheed Martin under a new contract in August 2000. Efforts for Block IIF are being added to the existing contract with Boeing as ECPs.									
<b>(U) F. Schedule Profile</b>									
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4
(U)	Enhanced IIA IMOSC Development begins	*							
(U)	Enhanced IIA IMOSC Development complete				*				
(U)	IIF IMOSC Development Begins						X		
(U)	Launch/Early Orbit (L/EO) Consolidation Development begins			*					
(U)	Continue OCS Architectural Implementation:								
(U)	Phase 3/4 delivery			*					
(U)	Phase 3/4 Installed in GPS Support Facility (GSF)					*			
(U)	Version 5 Development Begins	*							
(U)	Version 5.0 (COTS upgrade) delivery to site						X		
(U)	M-MSRE development begins							X	
(U)	Version 5.2 (IIF baseline) delivery to site								X
(U)	Version 6 Development Begins							X	
(U)	GPS Modernization Studies complete	*							
(U)	GPS Modernization Long Lead Production Block IIR Begins	*							
(U)	GPS Block IIR CDR				*				
Project 3030		Page 4 of 7 Pages				Exhibit R-2 (PE 0305165F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
07 - Operational System Development					0305165F NAVSTAR GPS (Space)					3030				
<b>(U) <u>F. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) GPS Block IIR Production Start				*										
(U) GPS Block IIR development complete									X					
(U) GPS Overarching Integrated Product Team (OIPT)				*										
(U) GPS Block IIF PDR					*									
(U) GPS Defense Acquisition Executive Program Review								X						
(U) GPS Modernization Long Lead Production Block IIF begins								X						
(U) GPS Block IIF CDR										X				
(U) GPS III Architecture Study Contracts Awarded	*													
* = Completed, X = Scheduled														

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

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305165F NAVSTAR GPS (Space)</b>				<b>3030</b>		
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
System Engineering/Support	Various	Various	N/A	N/A	28,600	901	935	960	Continuing	TBD
GPS Modernization Tech Spt		Various			16,393	20,291	6,565	7,947	Continuing	TBD
Miscellaneous	Various	Various	N/A	N/A	3,231	0	0	0	0	3,231
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					300,166	219,971	171,155	315,191	TBD	TBD
Subtotal Support and Management					48,224	21,192	7,500	8,907	TBD	TBD
Subtotal Test and Evaluation										
Total Project					348,390	241,163	178,655	324,098	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>				PROJECT <b>4137</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4137	Launch and Test Range System (LTRS) Modernization	57,868	70,113	82,108	106,251	96,358	103,509	93,702	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>In FY 2003, this project was renamed Launch and Test Range System (LTRS) Modernization (formerly Range Standardization and Automation (RSA) Program) to better depict on-going efforts. This action did not change project content.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Eastern Range (ER) at Patrick AFB and Cape Canaveral AFS, FL, and the Western Range (WR) at Vandenberg AFB, CA, make up 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.</p> <p>The Air Force is addressing range deficiencies through a two-part modernization program. First, the Range Standardization and Automation (RSA) Phase IIA contract continues to modernize the control/display and communication segments at both ranges. Second, the SLRSC 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.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$33,758      Continued RSA Phase IIA. Continued development, test, and evaluation of RSA Phase IIA systems, to include: planning &amp; scheduling, weather, communications network (voice, video, data, core, net manager), differential GPS for metric tracking, interim flight safety, final flight operations and analysis, and digital telemetry. Performed product engineering, integration efforts, engineering studies, and related tasks to support the architecture.                      (U) \$14,061      Continued SLRSC. Funded SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Funded instrument modernization system designs (including development of SLRS specification, instrument segment specification, and interface specifications), completion of system analyses, and trade studies. Continued assessment of COTS solutions for applicability to down-range instrumentation requirements and related design efforts.</p>										
Project 4137			Page 1 of 8 Pages				Exhibit R-2 (PE 0305182F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0305182F Spacelift Range System</b>	<b>4137</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands) Continued</u></b>		
(U) \$2,319	Provided program support for Systems Program Office (SPO).	
(U) \$7,730	Conducted three follow-on California space infrastructure projects with funds added by Congress per request of California Space Authority (CSA).	
(U) \$57,868	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$33,809	Continue RSA Phase IIA. Continue 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, digital telemetry, command generation, simulation, and range operations. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture. Provide operational support to test and evaluation.	
(U) \$32,146	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Conduct instrument modernization systems design review. Begin development, testing, and evaluation of instrumentation systems to include: fixed and mobile telemetry, fixed and mobile command destruct equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, weather equipment, and surveillance equipment. 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) \$2,358	Provide program support for Systems Program Office (SPO).	
(U) \$1,800	In conjunction with California Space Authority (CSA), conduct space integration master planning to analyze future space requirements in support of homeland defense, with funds added by Congress.	
(U) \$70,113	Total	
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$40,458	Continue RSA Phase IIA. Continue development, test, and evaluation of RSA Phase IIA systems, including weather, communications network (voice, video, data, core, net manager), final flight operations and analysis, digital telemetry, command generation, simulation, and range operations. Perform product engineering, integration efforts, engineering studies, and related tasks to support the architecture. Provide operational support to test and evaluation.	
(U) \$38,337	Continue SLRSC. Continue SLRSC systems engineering technical effort including architecture management, requirement management, systems integration, and engineering analyses. Develop, test, and evaluate instrumentation systems to include: fixed and mobile telemetry,	
Project 4137	Page 2 of 8 Pages	Exhibit R-2 (PE 0305182F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305182F Spacelift Range System</b>		<b>4137</b>	
(U) <b><u>A. Mission Description Continued</u></b>					
(U) <b><u>FY 2003 (\$ in Thousands) Continued</u></b>					
fixed and mobile command destruct equipment, fixed and mobile optics instruments, radars, radio frequency monitoring equipment, 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)	\$3,313	Provide program support for Systems Program Office (SPO).			
(U)	\$82,108	Total			
(U) <b><u>B. Budget Activity Justification</u></b>					
These efforts are categorized as Budget Activity 7, Operational Systems Development, since they upgrade existing operational capabilities with new systems. Funding for modernization of both the ER and the WR is consolidated in this program element to support the integrated SLRS approach.					
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	84,373	65,097	74,898	TBD
(U)	Appropriated Value	85,154	65,097		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-596	-784		
	b. Small Business Innovative Research	-495			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-2,665			
	e. Rescissions	-185			
(U)	Adjustments to Budget Years Since FY 2002 PBR	-23,345	5,800	7,210	
(U)	Current Budget Submit/FY 2003 PBR	57,868	70,113	82,108	TBD
(U) <b><u>Significant Program Changes:</u></b>					
FY 2001: \$2.7M decrease is a result of below-threshold reprogramming for higher AF priorities.					
FY 2001: \$23.3M decrease is a result of internal reprogramming of congressionally added funds of \$12.2M and \$11.1M to activate Rocket Test Stand 1D and upgrade Rocket Component Test Stand 2A, respectively, at Edwards AFB, CA. Funding was transferred to PE 0602203F, Aerospace Propulsion, Project 4847, Rocket Propulsion Technology, to align the funding with the appropriate budget activity for this effort.					
Project 4137		Page 3 of 8 Pages		Exhibit R-2 (PE 0305182F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305182F Spacelift Range System</b>				PROJECT <b>4137</b>		
(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>										
(U) <b><u>Significant Program Changes Continued:</u></b> FY 2002: \$5.8M increase added by Congress for RSA (\$4.0M) and space integration master planning for Homeland defense (\$1.8M) FY 2003: \$7.2M increase is a result of appropriation realignment to appropriately fund development effort.										
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) OPAF (PE 0305182F, Spacelift Range System Space, P-64, BA 03)	95,031	131,841	108,281	152,558	182,204	172,876	181,173	Continuing	TBD	
(U) OPAF (PE 0305182F, Initial Spares, P-104, BA 05)	2,185	2,300	2,016	724	1,458	2,852	2,852	Continuing	TBD	
(U) <b><u>E. Acquisition Strategy</u></b> The AF is using a series of competitively awarded contracts to modernize the ranges. The RSA Phase IIA contract (FY 1996 to FY 2007) is standardizing and automating 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 under one contract.										
(U) <b><u>F. Schedule Profile</u></b>										
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(U) RSA Phase IIA										
(U) - Planning & Scheduling										
(U) -- Govt Acceptance					*					
(U) -- OT&E							X			
(U) -- Operational Turnover								X		
(U) - Weather										
(U) -- Display Integration Testing					*					
(U) -- First Increment Govt Acceptance							X			
(U) -- Second Increment Govt Acceptance								X		
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 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0305182F Spacelift Range System</b>					<b>4137</b>		
<b>(U) <u>F. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) -- ER Dispersion Assessment System Govt Acceptance												X
(U) - Flight Operations Version 1 (FOV1)												
(U) -- ER Govt Acceptance				*								
(U) -- Operational Turnover								X				
(U) - Communications												
(U) -- ER Initial Increment Govt Acceptance				*								
(U) -- WR Initial Increment Govt Acceptance							X					
(U) -- ER Final Increment Govt Acceptance										X		
(U) -- WR Final Increment Govt Acceptance											X	
(U) - Differential GPS Metric Tracking												
(U) -- Operations Concept Complete				*								
(U) -- Govt Acceptance								X				
(U) - Flight Operations and Analysis												
(U) -- Requirements Release			*									
(U) -- Design Release							X					
(U) -- Qualification Testing											X	
(U) - Digital Telemetry												
(U) -- 1st Increment Contract Award				*								
(U) -- 2nd Increment Contract Award							X					
(U) -- Post-Detect Telemetry Design Release							X					
(U) -- Post-Detect Telemetry Govt Acceptance										X		
(U) - Command Generation, Simulation, and Range Operations												
(U) -- Begin product engineering/design								X				
(U) -- Begin systems integration												X
(U) SLRS Contract												
(U) - Contract Award			*									
Project 4137					Page 5 of 8 Pages					Exhibit R-2 (PE 0305182F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305182F Spacelift Range System</b>					<b>4137</b>				
<b>(U) <u>F. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) - Complete System Design Review														
(U) - Complete Telemetry Instrumentation Preliminary Design Review (PDR)														
(U) - Complete Command Instrumentation PDR														
(U) - Start Weather, Command, & Telemetry Instrumentation Subsystem Design														
(U) - Start Radar, Optics, & Surveillance Instrumentation Subsystem Design														
(U) California Space Authority Studies/Projects														
(U) - Flight Termination Study Contract Award														
(U) - Extended Range Concept Study Contract Award														
(U) - Alternate Range Ops Control Center Tech Demo Contract Award														
* = completed event; X = planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>					<b>0305182F Spacelift Range System</b>			<b>4137</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	RSA Phase IIA Contract					33,758	33,809	40,458			
(U)	SLRS Contract					14,061	32,146	38,337			
(U)	Program Support					2,319	2,358	3,313			
(U)	California Space Authority Studies/Projects					7,730	1,800				
(U)	Total					57,868	70,113	82,108			
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Lockheed Martin	C/CPAF	Nov 95	396,481	396,481	111,502	33,758	33,809	40,458	Continuing	TBD
	(RSA Phase IIA)										
	ITT Industries (SLRSC)	C/CPAF	Nov 00	293,692	293,692	1,000	14,061	32,146	38,337	Continuing	TBD
	<u>Support and Management Organizations</u>										
	SPO Program Support	Various	Various	N/A	N/A	16,526	2,319	2,358	3,313	Continuing	TBD
	(FFRDC, SETA, SPO Ops)										
	California Space Authority	Various	Various	N/A	N/A	8,036	7,730	1,800	0	0	17,566
	Studies/Projects										
	<u>Test and Evaluation Organizations</u>										
	N/A										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305182F Spacelift Range System			PROJECT 4137	
<b>(U) Government Furnished Property:</b>								
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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.								
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development				112,502	47,819	65,955	78,795	TBD
Subtotal Support and Management				24,562	10,049	4,158	3,313	TBD
Subtotal Test and Evaluation								
Total Project				137,064	57,868	70,113	82,108	TBD



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305202F Dragon U-2 (JMIP)					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	32,247	30,496	17,442	4,344	8,098	6,441	10,122	Continuing	TBD
4818 Imaging and Targeting Support	18,058	0	0	0	0	0	0	0	17,454
4820 Sensor Development	14,189	14,657	10,582	4,344	8,098	6,441	10,122	Continuing	TBD
4945 High Altitude Subsystems	0	15,839	6,860	0	0	0	0	0	27,099
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Note: High Altitude Subsystems is a new BPAC to administratively replace Imaging and Targeting Support which exists in two PEs. Imaging and Targeting Support was previously called Advanced Technology -- a portion of which was moved from PE 0305206F effective FY01. Sensor Development was previously called Manned Reconnaissance Systems U-2 and was moved from PE 0305207F effective FY01. These are merely realignment and name changes of BPACs to more accurately describe efforts within the U-2 Program.

- 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 anticipates receiving \$10.8M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used for RAS-1R NRE in the U-2 program.

(U) **A. Mission Description**  
 The RDT&E portion of this program element funds efforts required to enhance and sustain the U-2 Dragon 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.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE	
BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>		<b>0305202F Dragon U-2 (JMIP)</b>			
(U) <b><u>B. Budget Activity Justification</u></b>					
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.					
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	27,546	32,804	13,965	TBD
(U)	Appropriated Value	32,546	30,804		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-308		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions	-299			
(U)	Adjustments to Budget Years Since FY 2002 PBR			3,477	
(U)	Current Budget Submit/FY 2003 PBR	32,247	30,496	17,442	TBD
(U) <b><u>Significant Program Changes:</u></b>					
FY03 includes \$3.477 added for U-2 in BPAC 674820 Sensor Development for ASARS-2A program.					

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>	PROJECT <b>4818</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4818     Imaging and Targeting Support	18,058	0	0	0	0	0	0	0	17,454

Note: FY02 and outyear funding in PE 0305202F/BPAC 674945 (High Altitude Sub-systems).

**(U) A. Mission Description**

This project supports the U-2 Advanced Defensive System (ADS) development. ADS is designed to provide situational awareness and self-protection jamming to degrade and or detect the ability of surface-to-air weapon systems to engage the U-2 aircraft. A full ADS capability will be achieved through spiral upgrades. Spiral upgrades will address modern RF signals in the baseline system. Follow-on upgrades will include infrared warning and defense. Onboard and offboard data fusion will be provided as a growth provision to enhance situational awareness.

**(U) FY 2001 (\$ in Thousands)**

- (U) \$11,838            Defensive System Hardware Development
- (U) \$5,500            Software Development
- (U) \$570              SPO Support
- (U) \$150              System Test
- (U) \$18,058          Total

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

- (U) \$0                Funding moved to PE 0305202F/BPAC 674945
- (U) \$0                Total

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

- (U) \$0                Funding transferred to PE 0305202F/BPAC 674945 in FY02
- (U) \$0                Total

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

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>			PROJECT <b>4818</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Other APPN										
<b>(U) D. Acquisition Strategy</b>										
Funds are for the engineering, manufacturing and development for the U-2 Advanced Defensive System (ADS). A sole source contract was awarded to a prime contractor which will be responsible for delivering a total system. Efforts include the development of ADS, integration on the U-2 aircraft, testing and production planning.										
<b>(U) E. Schedule Profile</b>										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) U-2 ADS Milestone II										
(U) ADS Phase II Contract Award										
(U) Begin ADS Flight Testing										
							X			
Project 4818			Page 4 of 15 Pages			Exhibit R-2A (PE 0305202F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0305202F Dragon U-2 (JMIP)</b>			<b>4818</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Hardware and Software Development					17,338				
(U)	Mission Support					570				
(U)	System Test					150				
(U)	Total					18,058				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Adv Def Sys Cont	CPIF	Mar 00	27,800	27,800		17,338			Continuing	TBD
<u>Support and Management Organizations</u>										
ASC/RA						570			Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Eglin AFB, Edwards AFB						150			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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						17,338			TBD	TBD
Subtotal Support and Management						570			TBD	TBD
Subtotal Test and Evaluation						150			TBD	TBD
Total Project						18,058			TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305202F Dragon U-2 (JMIP)</b>	<b>PROJECT</b> <b>4820</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4820      Sensor Development	14,189	14,657	10,582	4,344	8,098	6,441	10,122	Continuing	TBD

In FY03, the U-2 program anticipates receiving \$10.8 from the Cost of War Transfer Account. These funds are not included in the FY03 Air Fore baseline. Funding will be used for RAS-1R NRE in the U-2 program.

**(U) A. Mission Description**

This development project supports high payoff improvements to the U-2 sensors such as the Advanced Synthetic Aperture Radar System (ASARS-2A) and the SENIOR YEAR Electro-optical Reconnaissance System (SYERS) 2 Improvement Program.

The ASARS-2A Program improves area search, precision geolocation, and image quality characteristics sufficiently to directly support the targeting of Precision Guided Munitions (PGMs). Complex imagery will be produced by the ASARS-2A system and support significant exploitation products for the imagery analysts. 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), Electronic Counter-Countermeasures (ECCM), REC upgrades and software upgrades. Developing new LRUs with next generation technology will make ASARS-2A supportable through the expected service life of the U-2 and provide capability enhancements necessary to support PGMs. Improvements to ASARS-2A modes are transferable to Global Hawk High Altitude Endurance Unmanned Aerial Vehicles (HAE UAV).

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 to incorporate next generation technology, maintaining and enhancing system supportability.

The RF Int Enhancements Program maintains present capability by developing replacements for current components affected by diminishing manufacturing sources as well as injecting capability to cope with evolving signals of interest.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
<b>07 - Operational System Development</b>		<b>February 2002</b>
PE NUMBER AND TITLE		<b>4820</b>
<b>0305202F Dragon U-2 (JMIP)</b>		
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$894	Continue ASARS-2A Development	
(U) \$2,585	Continue On-Board Processor (OBP) and Receiver Exciter Controller (REC) Improvements	
(U) \$1,418	Continue Dual Data Link (DDL-II) Interface to ASARS-2A/SYERS 2	
(U) \$596	Conduct Image Quality (IQI) Enhancements	
(U) \$1,385	Implement Software Updates	
(U) \$530	Flight Test	
(U) \$686	Mission Support	
(U) \$1,141	Fuels Conversion	
(U) \$4,954	SYERS Polarimetric Development (SYERS 2)	
(U) \$14,189	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$1,770	Continue ASARS-2A Interface to Dual Data Link (DDL-II)	
(U) \$6,957	Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development and System Robustness Improvements	
(U) \$400	Image Chain Analysis	
(U) \$500	Implement ECCM Upgrades	
(U) \$500	ASARS-2A Flight Test	
(U) \$2,000	RF-INT Enhancements	
(U) \$2,000	SYERS Polarimetric Development (SYERS 2)	
(U) \$530	Mission Support	
(U) \$14,657	Total	
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$3,400	Continue ASARS-2A Image Quality Improvement (IQI) Software/Hardware Development Tasks and System Robustness Improvements	
(U) \$500	SYERS Upgrades (such as SYERS Polarimetric and Geolocation Models)	
(U) \$6,682	RF Int Enhancements/ALF Non-Recurring Engineering	
(U) \$0	No Activity	
(U) \$10,582	Total	
Project 4820	Page 7 of 15 Pages	Exhibit R-2A (PE 0305202F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305202F Dragon U-2 (JMIP)</b>				<b>4820</b>		
<b>(U) B. Project Change Summary</b>										
Congressional mark increased funding for SYERS polarimetric development in FY01 and FY02.										
FY02 -- From the original FY02 PB Position, moved \$1000K Advanced Defensive System funding and \$1100K Fuels Conversion funding from the Sensor Development BPAC (674820) to the more appropriate High Altitude Subsystems BPAC (674945). Also move \$2000K RF-Int Enhancements from 674945 to 674820.										
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) APAF, Manned Recce, 0305202F - ASARS-2A Production	12,777	18,659	4,000	4,100	4,500	4,500	5,700	0	54,236	
(U) APAF, Manned Recce, 0305202F - DDL-II Production	6,510	12,390	12,970	17,580	20,280	0	0	0	69,730	
<b>(U) D. Acquisition Strategy</b>										
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 and SYERS, develop and test new technology line replaceable units (LRUs). There is associated procurement funding tied to this development activity.										
<b>(U) E. Schedule Profile</b>										
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(U) ASARS-2A Program										
(U) - Begin DDL-II Phase 1 and DDL-II Phase 2					*					
(U) - Begin IQI Activities						X				
(U) - Continue DDL-II Interface							X		X	
(U) - Continue IQI Activities							X		X	
(U) SYERS 2 Improvement Program										
(U) - Begin SYERS Polarametric Development							*			
Project 4820	Page 8 of 15 Pages				Exhibit R-2A (PE 0305202F)					



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305202F Dragon U-2 (JMIP)</b>				PROJECT <b>4820</b>																																						
<p>(U) <u><b>E. Schedule Profile Continued</b></u></p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width: 40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="2" style="text-align: center;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td style="width: 40%;">(U) Begin Fuel Conversion Phase II</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> <tr> <td>Note: * denotes completed event, X denotes planned event.</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><td></td> </tr> </tbody> </table>											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		(U) Begin Fuel Conversion Phase II	1	2	3	4	1	2	3	4	1	2	3	4	Note: * denotes completed event, X denotes planned event.						X						
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																					
(U) Begin Fuel Conversion Phase II	1	2	3	4	1	2	3	4	1	2	3	4																																		
Note: * denotes completed event, X denotes planned event.						X																																								
Project 4820			Page 9 of 15 Pages				Exhibit R-2A (PE 0305202F)																																							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305202F Dragon U-2 (JMIP)</b>				<b>4820</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	DDL-II Interface					1,418		1,770			
(U)	IQI Hardware/Software Development and System Robustness Improvements					5,990		8,357		3,400	
(U)	Mission Support					686		530			
(U)	JP-8 FUELS CONVERSION					1,141					
(U)	SYERS Polarimetric (SYERS 2)					4,954		2,000		500	
(U)	RF Int Enhancements/ALF Non-Recurring Engineering							2,000		6,682	
(U)	Total					14,189		14,657		10,582	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Raytheon and BF (ASARS-2A and SYERS 2)	CPIF/CPFF	3Q96	80,982	105,000	0	11,832	11,627	3,600	Continuing	TBD
	RF Int Enhancements	CPIF	3Q02					2,000	6,682		8,682
	AFRL (Fuels Conversion)	CPIF	3Q99				1,141				1,141
	<u>Support and Management Organizations</u>										
	ASC/RA (from ASARS-2A)						686	530	300	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	Edwards AFB						30				30
	Palmdale						500	500		Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305202F Dragon U-2 (JMIP)</b>			<b>4820</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	12,973	13,627	10,282	TBD
	Subtotal Support and Management		686	530	300	TBD
	Subtotal Test and Evaluation		530	500		TBD
	Total Project	0	14,189	14,657	10,582	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305202F Dragon U-2 (JMIP)</b>	<b>PROJECT</b> <b>4945</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4945 High Altitude Subsystems	0	15,839	6,860	0	0	0	0	0	27,099

Note: FY01 funding included in PE 0305202F/BPAC 674818. In FY02 this BPAC changed number and title to High Altitude Subsystems to correct BPAC duplication of 674818 in PEs 35202F and 35206F.

**(U) A. Mission Description**

This project supports development and integration of subsystems on the U-2 (e.g., Advanced Defensive System (ADS) development, RF Int, cockpit upgrades, navigator upgrades, datalinks), and U-2 specific interfaces required to other systems developed in other program elements (PEs).

The U-2 Advanced Defensive System (ADS) development provides an new Wide Band Rada 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.

The Fuels Conversion Program is an AFRL 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.

The Dual Data Link (DDL)-II Program provides the capability to transmit ISR data via dual, simultaneous, independent wideband datalinks. The RF Int Enhancements Program maintains present capability by developing replacements for current components affected by diminishing manufacturing sources as well as injecting capability to cope with evolving signals of interest.

**(U) FY 2001 (\$ in Thousands)**

- (U) \$0** Funding included in BPAC 674818/PE 0305202F
- (U) \$0** Total

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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$13,423            Advanced Defensive System Block 30. Includes hardware/software development program and test program</p> <p>(U) \$1,100            Fuels Conversion</p> <p>(U) \$1,316            Continue Dual Data Link NRE, integration and test</p> <p>(U) \$15,839           Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$4,009            Advanced Defensive System (ADS) Block 30. Includes hardware/software development program and test program.</p> <p>(U) \$2,851            Complete Dual Data Link -2 development program</p> <p>(U) \$6,860            Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>In FY02, the DDL-II program received \$20M as part of the Defense Emergency Relief Fund (DERF) and these funds are addressed in the U-2 35202F P-Series documents.</p> <p>Also in FY02, the DDL-II program received a \$4.0M Research &amp; Development (3600) funding cut.</p> <p>FY02 -- From the original FY02 PB Position, moved \$1000K Advanced Defensive System funding and \$1100K Fuels Conversion funding from the Sensor Development BPAC (674820) to the more appropriate High Altitude Subsystems BPAC (674945). Also move \$2000K RF-Int Enhancements from 674945 to 674820.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%;"><u>FY 2001</u></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>Cost to</u></th> <th style="width: 10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td><u>Actual</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Estimate</u></td> <td><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> <tr> <td>(U) Other APPN</td> <td align="right">0</td> <td align="right">19,200</td> <td align="right">24,200</td> <td align="right">22,500</td> <td align="right">16,500</td> <td align="right">11,200</td> <td align="right">10,600</td> <td align="right">0</td> <td align="right">104,200</td> </tr> </tbody> </table>									<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E	0	0	0	0	0	0	0	0	0	(U) Other APPN	0	19,200	24,200	22,500	16,500	11,200	10,600	0	104,200
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																						
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(U) AF RDT&E	0	0	0	0	0	0	0	0	0																																						
(U) Other APPN	0	19,200	24,200	22,500	16,500	11,200	10,600	0	104,200																																						
Project 4945			Page 13 of 15 Pages			Exhibit R-2A (PE 0305202F)																																									

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<p>(U) <b><u>D. Acquisition Strategy</u></b>                  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 the ASARS-2A Program, funds will be used for Image Quality Improvements (IQI) and for System Robustness Improvements. For DDL-II, develop, factory test and flight test the dual data link systems, and continue integration of ABIT P3I into datalink design. DDL-II utilizes existing CPIF contracts.</p>																																																																																																																																																																
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></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> </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) U-2 ADS Milestone 2 (Occurred 2Q00)</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) ADS Phase 2 Contract Award (3Q00)</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) ADS First Prototype Delivery</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><td></td> </tr> <tr> <td>(U) Begin ADS Testing</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><td></td> </tr> <tr> <td>(U) ADS Program Complete</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>(U) DDL-II Development &amp; Integration Contract Award</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><td></td> </tr> <tr> <td>(U) DDL-II DT Testing Complete</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>(U) Complete DDL-II SIL Testing</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) Complete DDL-II Flight Testing</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>(U) DDL-II LRIP Award</td> <td></td><td></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> </tr> </tbody> </table>									<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) U-2 ADS Milestone 2 (Occurred 2Q00)													(U) ADS Phase 2 Contract Award (3Q00)													(U) ADS First Prototype Delivery						X							(U) Begin ADS Testing						X							(U) ADS Program Complete												X	(U) DDL-II Development & Integration Contract Award				*									(U) DDL-II DT Testing Complete												X	(U) Complete DDL-II SIL Testing										X			(U) Complete DDL-II Flight Testing												X	(U) DDL-II LRIP Award								*				
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>					<b>0305202F Dragon U-2 (JMIP)</b>			<b>4945</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware and Software Development							13,423		4,009	
(U)	Government Engineering Support										
(U)	Fuels Conversion							1,100			
(U)	DDL-II							1,316		2,851	
(U)	Total							15,839		6,860	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
	<u>Product Development Organizations</u>										
	ADS Ctr	CPIF	Mar 00	N/A	N/A			10,393	3,859	Continuing	
	Fuels Conversion							1,100		1,100	
	DDL-II Dev and Test	CPIF	Various					1,316	2,351	Continuing	
	<u>Support and Management Organizations</u>										
	ASC/RA							180	150	Continuing	
	<u>Test and Evaluation Organizations</u>										
	Eglin AFB, Edwards AFB							2,850	500	Continuing	
						<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
						<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
	<u>Subtotals</u>									<u>Total</u>	
	Subtotal Product Development							12,809	6,210	TBD	TBD
	Subtotal Support and Management							180	150	TBD	TBD
	Subtotal Test and Evaluation							2,850	500	TBD	TBD
	Total Project							15,839	6,860	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	145,123	195,782	309,743	354,679	300,459	183,947	225,440	Continuing	TBD
4755 Predator	5,462	3,743	3,771	3,840	3,911	3,987	4,063	Continuing	TBD
4799 Global Hawk	137,382	189,759	305,972	350,839	296,548	179,960	221,377	Continuing	TBD
4883 JTC/SIL MUSE	2,279	2,280	0	0	0	0	0	0	4,579
Quantity of RDT&E Articles	2	0	0	0	0	0	0	0	47,548
<p>1. In FY02, Predator received \$167.6M 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.</p> <p>2. The Global Hawk program also received \$72.0M in FY02 as part of the Defense Emergency Response Fund (DERF). Funding was used to cover initial preparation and deployment of two Global Hawk aircraft, provide for 120 days of operations, and accelerate delivery of EO/IR sensors; in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.</p> <p>3. In FY03, Globak Hawk anticipates receiving \$34M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funds will be used to provide a defensive suite (\$30M) and SIGINT (\$5M).</p> <p>4. In FY03, the Predator program anticipates receiving \$124.0M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used to begin the procurement of 3 additional MQ-9 Predator B squadrons and accelerate current RQ-1 Predator A production.</p>									

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																								
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0305205F Endurance Unmanned Aerial Vehicles</b>																																																								
<p>(U) <b><u>A. Mission Description</u></b>                  Endurance Unmanned Aerial Vehicles (UAVs) are a family of unmanned vehicles developed to provide all-weather, day/night, reconnaissance and surveillance in direct support of theater collection requirements; and integrate with existing airborne reconnaissance architectures for mission planning, data processing, exploitation and dissemination. The RQ-1 Predator UAV was initiated as an Advanced Concept Technology Demonstration (ACTD) which completed in FY96. The Predator is a medium-altitude UAV which provides close-in ISR coverage. The RQ-4A Global Hawk was also initiated as an ACTD, completing in FY00. The Global Hawk is a high-altitude endurance (HAE) UAV, which provides theater-level ISR coverage. Both Predator and Global Hawk are 'Pathfinding' systems for future UAV operational concepts. Both systems 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.</p>																																																										
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is budget activity 7, Operational Systems Development, because it involves Air Force R&amp;D to field a highly capable operational system and provide essential operational capabilities.</p>																																																										
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">109,215</td> <td style="text-align: right;">190,237</td> <td style="text-align: right;">118,835</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">127,215</td> <td style="text-align: right;">197,737</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;">-1,168</td> <td style="text-align: right;">-1,955</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 style="text-align: right;">17,000</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">2,076</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 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">190,908</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">145,123</td> <td style="text-align: right;">195,782</td> <td style="text-align: right;">309,743</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	109,215	190,237	118,835	TBD	(U) Appropriated Value	127,215	197,737			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-1,168	-1,955			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	17,000				d. Below Threshold Reprogram	2,076				e. Rescissions					(U) Adjustments to Budget Years Since FY 2002 PBR			190,908		(U) Current Budget Submit/FY 2003 PBR	145,123	195,782	309,743	TBD
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<p>(U) <b><u>Significant Program Changes:</u></b>                  FY01: \$17M added for Global Hawk via FY01 Supplemental. FY01 Authorizations Conference directed that \$18M be made available from Defense-wide Counter-Drug funds to support a counter-drug demonstration in SOUTHCOM. FY01 Appropriations Conference added \$18M to purchase EO/IR sensors, develop dual band capability and precision target location.</p>																																																										

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

DATE

**February 2002**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0305205F Endurance Unmanned Aerial Vehicles**

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

(U) **Significant Program Changes Continued:**

FY02: PBD 817 added \$81.8M RDT&E for the acceleration of spiral development activities and for a cooperative ELINT demonstration in Germany. Received \$72M in DERF funding (not reflected in program total).

FY03: \$2M for JTC/SIL Muse transferred to PE 38601F. \$130M added in FY03 for Global Hawk via PDM IV. \$53.7M added for SIGINT development on Global Hawk.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305205F Endurance Unmanned Aerial Vehicles				PROJECT 4755	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4755 Predator	5,462	3,743	3,771	3,840	3,911	3,987	4,063	Continuing	TBD
<p>1. In FY02, Predator received \$167.6M 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.</p> <p>2. In FY03, the Predator program anticipates receiving \$124.0M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used to begin the procurement of 3 additional MQ-9 Predator B squadrons and accelerate current RQ-1 Predator A production.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The Predator unmanned aerial vehicle (UAV) is capable of sustained (long dwell) surveillance of critical targets, under most weather conditions, at a range of 400 nm from the launch area. Twelve Predator systems are being procured (each system consists of four air vehicles, one ground control station, and one Predator primary satellite link). The Predator is equipped with Electro-Optical/Infrared (EO/IR) and Synthetic Aperture Radar (SAR) sensors. Predator also 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. The system supports the theater commander and interfaces with the Command, Control, Communication, Computer and Intelligence (C4I) architecture. The first five Predator systems were procured either from an Advanced Concept Technology Demonstration or in an interim configuration. Beginning with the sixth system, Predators are in a Baseline (Block 1) configuration, with upgrades including de-icing, UHF/VHF voice relay, and IFF Mode IV. IR sensor improvements, growth payloads, work station upgrades and reliability and maintainability improvements are part of Block 1. UAV Common Automatic Recovery System (UCARS) has been added by Congress. As a result of a combat mission need statement (C-MNS) generated during ALLIED FORCE operations in Kosovo, one Predator system was outfitted with a temporary laser designator for use with precision guided munitions. Congress added production funds in FY00 for laser/EO/IR capable turret. In addition, Air Force funded the procurement of a permanent laser designator for use with precision guided munitions in FY02. As the first operational UAV in the Air Force, Predator will be the test platform to examine advanced capabilities, to include weaponization. The Air Force will continue experiments with Predator and expand into other roles and missions where UAVs can be used to leverage their 'risk mitigating' potential.</p>									
Project 4755			Page 4 of 21 Pages				Exhibit R-2A (PE 0305205F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>4755</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$200	OT&E	
(U) \$200	Conducted developmental testing for Tactical Common Data Link (TCDL)	
(U) \$1,716	Initiated TC DL integration	
(U) \$500	Rectified identified air vehicle and ground station deficiencies to improve reliability and maintainability	
(U) \$2,600	Weaponization demonstration	
(U) \$246	Field support	
(U) \$5,462	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$2,393	Pre-planned Product Improvement (To include: Advance capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation, continuing developmental testing for TC DL 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) \$3,743	Total	
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$2,396	Pre-planned Product Improvement (To include: Advance capabilities, sensor integration, quick reaction capabilities, payload development/integration, weaponization and experimentation)	
(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) \$3,771	Total	
Project 4755	Page 5 of 21 Pages	Exhibit R-2A (PE 0305205F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>																																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>			PROJECT <b>4755</b>																																																																							
<p>(U) <b><u>B. Project Change Summary</u></b>                  \$1M in FY01 funding approved for TCDL was redirected toward Predator weaponization test and demonstration. Congressional notification was provided by correspondence and briefings to all applicable Congressional Intelligence and Defense committees. The developmental testing for TCDL integration continues on into FY02.</p> <p>FY01 received \$1.8M BTR funds to support the completion of the Phase II weaponization demo of the Predator Demo Program.</p>																																																																															
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></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>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>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</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> </tr> <tr> <td>(U) Aircraft Procurement, AF (PE 35205F), Predator</td> <td style="text-align: right;">30,014</td> <td style="text-align: right;">35,783</td> <td style="text-align: right;">23,068</td> <td style="text-align: right;">23,741</td> <td style="text-align: right;">27,486</td> <td style="text-align: right;">31,274</td> <td style="text-align: right;">31,971</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> <tr> <td>(U) Aircraft Modification, AF (PE 35205F)</td> <td></td> <td style="text-align: right;">15,243</td> <td style="text-align: right;">10,532</td> <td style="text-align: right;">10,692</td> <td style="text-align: right;">10,866</td> <td style="text-align: right;">11,158</td> <td style="text-align: right;">11,345</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Aircraft Initial Spares, AF (PE 35205F)</td> <td></td> <td style="text-align: right;">504</td> <td style="text-align: right;">497</td> <td style="text-align: right;">495</td> <td style="text-align: right;">494</td> <td style="text-align: right;">494</td> <td style="text-align: right;">494</td> <td></td> <td></td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN										(U) Aircraft Procurement, AF (PE 35205F), Predator	30,014	35,783	23,068	23,741	27,486	31,274	31,971	Continuing	Continuing	(U) Aircraft Modification, AF (PE 35205F)		15,243	10,532	10,692	10,866	11,158	11,345	Continuing	TBD	(U) Aircraft Initial Spares, AF (PE 35205F)		504	497	495	494	494	494		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																						
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<p>(U) <b><u>D. Acquisition Strategy</u></b>                  Predator is in full scale production. Twelve systems plus attrition air vehicles are being acquired with the prime contractor, General Atomics Aeronautical Systems Inc. They also are assigned total system performance responsibility (TSPR). With the exceptions of the Tactical Endurance Synthetic Aperture Radar and the Ku-band Predator primary satellite link, which are being procured as GFE, all procurement of Predator systems will be through General Atomics. Program transitioned from interim contractor logistics support (ICS) to contractor logistics support (CLS) in FY00. Normalization of logistics support to balance CLS and organic support is underway.</p>																																																																															
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="width:25%;"><u>FY 2001</u></th> <th style="width:25%;"><u>FY 2002</u></th> <th style="width:25%;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>																																																																		
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Project 4755			Page 6 of 21 Pages				Exhibit R-2A (PE 0305205F)																																																																								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0305205F Endurance Unmanned Aerial Vehicles</b>					<b>4755</b>		
<b>(U) <u>E. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Delivery of first Baseline system											
(U)	OT&E											
(U)	Retrofit of ACTD Systems complete											
	* denotes completed event											
	X denotes planned event											
								X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>4755</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware/Software					2,041		2,393		2,396	
(U)	Demonstrations and test					2,300		500		500	
(U)	System integration and engineering support					696		350		375	
(U)	Other technical/engineering					425		500		500	
(U)	Total					5,462		3,743		3,771	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	General Atomics	SS/CPFF	Apr 98	N/A	N/A	9,692	4,837	2,943	2,971	Continuing	TBD
	PM TESAR			N/A	N/A	2,300				0	2,300
	<u>Support and Management Organizations</u>										
	ASC					0	425	500	500	Continuing	TBD
	AD/NAVAIR					320				0	320
	<u>Test and Evaluation Organizations</u>										
	AFOTEC					795	200	300	300	Continuing	TBD
	Misc					330				0	330
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
07 - Operational System Development		0305205F Endurance Unmanned Aerial Vehicles			PROJECT 4755	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<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>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		11,992	4,837	2,943	2,971	TBD
Subtotal Support and Management		320	425	500	500	TBD
Subtotal Test and Evaluation		1,125	200	300	300	TBD
Total Project		13,437	5,462	3,743	3,771	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>PROJECT</b> <b>4799</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4799      Global Hawk	137,382	189,759	305,972	350,839	296,548	179,960	221,377	Continuing	TBD
<p>1. In FY02 the Global Hawk program received \$72.0M as part of the Defense Emergency Response Fund (DERF). Funding was used to cover initial preparation and deployment of two Global Hawk aircraft, provide for 120 days of operations, and accelerate delivery of EO/IR sensors; in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.</p> <p>2. In FY03 Global Hawk anticipates receiving \$35M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used to provide a defensive suite (\$30M) and SIGINT (\$5M).</p> <p><b>(U) A. Mission Description</b></p> <p>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 surveillance and reconnaissance and includes the communications and interfaces with other theater systems required to support joint tactical warfighters at various levels of command. The Global Hawk is a fully autonomous, high-altitude, long endurance unmanned aircraft that is directly responsive to theater tasking. Global Hawk will integrate with the existing tactical airborne reconnaissance architectures for tasking, mission planning, data processing, exploitation, and dissemination. The aircraft is designed as a standoff imagery platform with the capability to operate within low-to-moderate air defense threat environments. The Air Force has initiated Engineering and Manufacturing Development (EMD), using a spiral approach to incorporate improvements to the aircraft, ground station, communication system, imagery sensors, and will also add a signals intelligence sensor capability. 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 conduct experiments with Global Hawk that explore its use in other mission areas and activities.</p> <p>In FY01, the Global Hawk transitioned from an Advanced Concept Technology Demonstration (ACTD) to a DoD 5000 ACAT ID acquisition program. An Acquisition Decision Memorandum was signed 6 Mar 01, approving entry into Engineering and Manufacturing Development (EMD) using spiral development and authorizing Low-rate Initial Production (LRIP).</p> <p>In FY02 - FY07, Global Hawk will continue with spiral development to enhance the design of the system to meet Operational Requirements Document (ORD) performance and capabilities.</p>									
Project 4799			Page 10 of 21 Pages				Exhibit R-2A (PE 0305205F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>4799</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$1,769	Provide Contractor and Government Demonstration and Evaluation Support necessary to accomplish the Military Utility Assessment (Phase III)	
(U) \$31,897	Fabrication and Integration of two additional air vehicles for EMD (#6 and #7) (Phase IIC)	
(U) \$60,170	Non-recurring Engineering (NRE) to evolve the Global Hawk to a Spiral 1 configuration -- Includes spiral development of sensors and other capabilities -- Spiral development (Spiral 1 to Spiral 2) of air vehicles which will satisfy needs identified in the MUA and ORD -- FY01 Supplemental added \$17M for acceleration of spiral development capabilities and competitive fly off of sensors	
(U) \$9,000	Operational Demonstration in Australia (total cost of \$10M remains unchanged - NATO R&D funds and the CDL program provided the other \$1M in support of this effort)	
(U) \$6,224	Provide Government Test and Evaluation Support	
(U) \$10,322	Government Support, Studies and Related Tasks for the Global Hawk Program	
(U) \$18,000	Added \$18M to FY01 program per Congressional plus-up for the following: -- additional EO/IR sensors and development of a dual-band capability and precision target location	
(U) \$137,382	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$21,286	Complete Fabrication and Integration of two additional ACTD aircraft for EMD (#6 and #7) (Phase IIC)	
(U) \$134,817	Continue Spiral Development -- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD	
(U) \$6,750	Provide Government Test and Evaluation Support	
(U) \$7,406	Government Support	
(U) \$500	Global Hawk/German ELINT flight demonstration	
(U) \$3,000	Demonstrations/Exercises	
(U) \$16,000	Added \$16M to FY02 program per Congressional plus-up for the following -- Integration/Demonstration of High-Band SIGINT System on Global Hawk	
(U) \$189,759	Total	
Project 4799	Page 11 of 21 Pages	Exhibit R-2A (PE 0305205F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		<b>DATE</b> February 2002														
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>														
<b>07 - Operational System Development</b>	<b>0305205F Endurance Unmanned Aerial Vehicles</b>	<b>4799</b>														
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$284,172</td> <td>Continue Spiral Development and related tasks</td> </tr> <tr> <td></td> <td>-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD</td> </tr> <tr> <td>(U) \$6,300</td> <td>Provide Government Test and Evaluation Support</td> </tr> <tr> <td>(U) \$7,500</td> <td>Government Support</td> </tr> <tr> <td>(U) \$5,000</td> <td>Global Hawk/German ELINT flight demonstration</td> </tr> <tr> <td>(U) \$3,000</td> <td>Demonstrations /Exercises</td> </tr> <tr> <td>(U) \$305,972</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>The Defense Acquisition Board (DAB) met on 16 Feb 01 to consider a Milestone II decision to transition Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). On 6 Mar 01, USD/AT&amp;L issued an Acquisition Decision Memorandum (ADM) and designated Global Hawk as an Acquisition Category ACAT ID Major Defense Acquisition Program. The ADM approved 1) Global Hawk to enter into EMD for Block 5 and spiral development of Block 10 Global Hawk; 2) the Acquisition Strategy and Acquisition Program Baseline (APB); 3) Low Rate Initial Production (LRIP) and 4) associated advanced procurement and logistics support for the LRIP systems</p> <p>The FY01 Appropriations Conference added \$18M in FY01 to purchase replacement EO/IR sensors for the ACTD air vehicles, develop a dual-band capability, and precision target location.</p> <p>The FY01 Authorization Conference directed \$18M in FY01 be made available to support the Global Hawk SOUTHCOM Counter-Drug Demonstration. Funds were allocated for this effort from Defense-wide Drug Interdiction and Counter-Drug Activities to the Research, Development, Test, and Evaluation, Air Force Budget Activity 7, Operational System Development, and remain in PE 0208889F, BPAC 675002 for Global Hawk execution. (Reference OSD Reprogramming Action FY01-25IR in accordance with Form 440 01/02-25).</p> <p>The FY01 Supplemental added \$17M to accelerate the development of Global Hawk and to conduct a competitive flyoff demonstration to evaluate existing sensors.</p> <p>The FY02 Defense Planning Guidance identified Global Hawk as a transformational program and the Air Force accelerated plans for development, production and</p>			(U) \$284,172	Continue Spiral Development and related tasks		-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD	(U) \$6,300	Provide Government Test and Evaluation Support	(U) \$7,500	Government Support	(U) \$5,000	Global Hawk/German ELINT flight demonstration	(U) \$3,000	Demonstrations /Exercises	(U) \$305,972	Total
(U) \$284,172	Continue Spiral Development and related tasks															
	-- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA and ORD															
(U) \$6,300	Provide Government Test and Evaluation Support															
(U) \$7,500	Government Support															
(U) \$5,000	Global Hawk/German ELINT flight demonstration															
(U) \$3,000	Demonstrations /Exercises															
(U) \$305,972	Total															
Project 4799	Page 12 of 21 Pages	Exhibit R-2A (PE 0305205F)														

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								<b>DATE</b> February 2002	
<b>BUDGET ACTIVITY</b>				<b>PE NUMBER AND TITLE</b>				<b>PROJECT</b>	
<b>07 - Operational System Development</b>				<b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>4799</b>	
<b>(U) <u>B. Project Change Summary Continued</u></b>									
fielding of the Global Hawk system.									
For FY02, PBD 817 added \$81.8M RDT&E for the acceleration of spiral development activities (i.e., electrical-power upgrades, sensor capabilities ,improvements, etc.), and for a cooperative ELINToperational demonstration in Germany.									
PBD 630 realigned funds for SIGINT sensor development from FY03-FY07 Airborne Reconnaissance Systems (PE 0305206F) to Global Hawk. This consolidation added \$53.7M RDT&E in FY03 for the continued development of the High Band SIGINT Subsystem.									
Global Hawk received a PDM add of \$130M in FY03 to accelerate the program and more rapidly field needed capabilities.									
In FY02 the Global Hawk program received \$72M as part of the Defense Emergency Response Fund (DERF).									
Funding was used to cover initial preparation and deployment of two Global Hawk aircraft, provide for 120 days of operations, and accelerate delivery of EO/IR sensors, in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	137,382	189,759	305,972	350,839	296,548	179,960	221,377	Continuing	TBD
(U) Other APPN									
(U) AF MILCON			11,740	25,000	25,000			Continuing	TBD
(U) AF O&M		3,986	11,813	32,725	46,934	65,106	99,096	Continuing	TBD
(U) AF MILPERS		1,053	5,512	13,599	21,979	28,282	34,567	Continuing	TBD
(U) Aircraft Procurement, APPN 10 AF (HAE UAV)	22,183	116,581	104,861	234,692	266,083	358,237	814,807	Continuing	TBD
(U) Aircraft Procurement APPN 11 AF (HAE UAV)							9,865		
(U) Other Procurement, 3080 (HAE UAV)			899	199	298	298		Continuing	TBD
Project 4799									

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>	PROJECT <b>4799</b>
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**(U) D. Acquisition Strategy**

The Global Hawk program began as an ACTD under DARPA in 1994. Of the fourteen original contractor teams, five were selected to submit design proposals, with Northrop Grumman Ryan Aeronautical Center (NG-RAC), formerly Teledyne Ryan Aeronautical (TRA), competitively selected for the design/development effort. Under the development phase of the agreement, the contractor built and tested five Global Hawk aircraft and the developmental ground segment (consisting of three LREs and two MCEs). Streamlined procurement, under Other Transaction Authority (OTA) was used to allow 'best commercial practices,' avoid all non value-added tasks and documentation, minimize cost, and provide flexibility. ACTD transition activities, fabrication of aircraft #6 and #7, support of the overseas demonstration in Australia and Congressionally directed demonstrations and tasks, will complete under the current ACTD OTA agreement.

Based on the ADM, 6 Mar 01, the DAB Milestone II decision transitions Global Hawk from an Advanced Concept Technology Demonstration to Engineering and Manufacturing Development (EMD) and Low-Rate Initial Production (LRIP). Global Hawk EMD will use spiral development to meet full ORD requirements, including improvements to sensors and subsystems. Contracts starting in FY01 will be under FAR-based rules. EMD will be a Cost-Plus Award Fee (CPAF) type contract, while LRIP will be a Fixed-Price Incentive (FPI).

In FY02 - 07, additional funding was received to accelerate spiral development and fielding.

In FY02, the program will continue spiral development of capabilities that will enable Global Hawk to address deficiencies identified during the MUA and meet full ORD requirements.

The FY01 Supplemental added \$17M for accelerate the development of Global Hawk and a conduct a competitive flyoff demonstration to evaluate existing sensors.

**(U) E. Schedule Profile**

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) ACTD Military Utility Assessment Report (Sep 00)												
(U) Milestone II Decision		*										
(U) Start of EMD Program		*										
(U) Australian Demonstration			*									
(U) Delivery of aircraft #6						X						
(U) Award EMD System Spiral 2 Contract						X						
(U) Delivery of aircraft #7										X		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305205F Endurance Unmanned Aerial Vehicles</b>					<b>4799</b>				
<b>(U) <u>E. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Canadian Overflight												X	
(U)	Global Hawk/German ELINT Flight Demonstration												X	
(U)	Global Hawk SOUTHCOM demo												X	
(U)	Start EMD System Testing												X	
(U)	EMD Spiral 1 Complete												X	
	* denotes completed event													
	X denotes planned event													
Project 4799					Page 15 of 21 Pages					Exhibit R-2A (PE 0305205F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0305205F Endurance Unmanned Aerial Vehicles</b>			<b>4799</b>		
<b>(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u></b>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U) Provide Contractor Demonstration and Evaluation Support necessary to accomplish Military Utility Assessment (Phase III)					1,769					
(U) Fabrication and Integration of aircraft #6 and #7 (Phase IIC)					31,848	21,286				
(U) Government Support, Studies and Related Tasks for the Global Hawk program					10,071	7,406	7,500			
(U) Global Hawk/German ELINT Flight Demonstration						500	5,000			
(U) Demonstrations/Exercises						3,000	3,000			
(U) Spiral Development - Non-recurring Engineering (NRE) to evolve the Global Hawk to Spiral 1 and Spiral 2 configurations:					60,185	134,817	284,172			
(U) -- Includes spiral development of sensors and other capabilities which will satisfy needs identified in the MUA, ORD, and emerging requirements										
(U) Operational Demonstration in Australia					9,000					
(U) Provide Government Test and Evaluation Support					6,509	6,750	6,300			
(U) EO/IR sensors, and development of dual-band capability and precision target location					18,000					
(U) Integration/Demonstration of High-band SIGINT System						16,000				
(U) Total					137,382	189,759	305,972			
<b>(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
<b>(U) <u>Performing Organizations:</u></b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Ryan Aeronautical Center	SS/CPAF/IF		N/A	N/A	112,870	111,802	170,469	284,172	Continuing	TBD
<u>Support and Management Organizations</u>										
Various			N/A	N/A	0	8,439	7,000	5,775	Continuing	TBD
Support ASC						1,632	2,040	1,725	Continuing	TBD
Project 4799					Page 16 of 21 Pages			Exhibit R-3 (PE 0305205F)		



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>4799</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Test and Evaluation Organizations</u>										
AFFTC			N/A	N/A	0	6,075	6,000	5,860	Continuing	TBD
AFOTEC			N/A	N/A	0	124	200	190	Continuing	TBD
JITC			N/A	N/A		220	250	250	Continuing	TBD
Various			N/A	N/A	0	9,090	3,800	8,000	Continuing	TBD
<b>(U) <u>Government Furnished Property:</u></b>										
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					112,870	111,802	170,469	284,172	TBD	TBD
Subtotal Support and Management					0	10,071	9,040	7,500	TBD	TBD
Subtotal Test and Evaluation					0	15,509	10,250	14,300	TBD	TBD
Total Project					112,870	137,382	189,759	305,972	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002																																										
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305205F Endurance Unmanned Aerial Vehicles</b>				PROJECT <b>4883</b>																																										
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																																								
4883	JTC/SIL MUSE	2,279	2,280	0	0	0	0	0	0	4,579																																								
<p>(U) <b><u>A. Mission Description</u></b>                      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) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$2,279 JTC/SIL MUSE                      (U) \$2,279 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$2,280 JTC/SIL MUSE                      (U) \$2,280 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      A separate project code within PE 35205F provides visibility of the funds supporting the JTC/SIL MUSE through FY02. The remainder of the funding for this BPAC has been transferred to the Modeling and Simulation PE..</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2001</u></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>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>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> <tr> <td>(U) Other APPN</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> <td align="right">0</td> </tr> </tbody> </table>												<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E	0	0	0	0	0	0	0	0	0	(U) Other APPN	0	0	0	0	0	0	0	0	0
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																									
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																										
(U) AF RDT&E	0	0	0	0	0	0	0	0	0																																									
(U) Other APPN	0	0	0	0	0	0	0	0	0																																									
Project 4883		Page 18 of 21 Pages				Exhibit R-2A (PE 0305205F)																																												

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002								
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT							
<b>07 - Operational System Development</b>				<b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>4883</b>							
(U) <b><u>D. Acquisition Strategy</u></b>															
N/A															
(U) <b><u>E. Schedule Profile</u></b>															
				<u>FY 2001</u>						<u>FY 2002</u>		<u>FY 2003</u>			
				1	2	3	4	1	2	3	4	1	2	3	4
(U) Activity TBD															
Project 4883				Page 19 of 21 Pages				Exhibit R-2A (PE 0305205F)							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305205F Endurance Unmanned Aerial Vehicles</b>				<b>4883</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U) No activity planned						2,279	2,300	0		
(U) Total						2,279	2,300	0		
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
JTC/SIL MUSE						2,279	2,300		Continuing	TBD
<u>Support and Management Organizations</u>										
None										
<u>Test and Evaluation Organizations</u>										
None										
<b>(U) Government Furnished Property:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>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 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305205F Endurance Unmanned Aerial Vehicles</b>			<b>4883</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development			2,279	2,300		TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						TBD
Total Project			2,279	2,300		TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305206F Airborne Reconnaissance Systems					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	127,573	57,208	66,810	75,866	68,138	67,645	69,175	Continuing	TBD
4817 Joint SIGINT Avionics Family (JSAF)	80,774	0	0	0	0	0	0	Continuing	TBD
4818 Imaging and Targeting Support	2,104	11,479	15,775	24,374	21,603	25,068	26,549	Continuing	TBD
4819 Common Data Link (CDL)	40,169	45,462	43,664	41,474	37,346	36,265	37,203	Continuing	TBD
4882 Compass Bright	4,526	267	4,882	5,048	5,223	5,322	5,423	Continuing	TBD
5038 Network Centric Collaborative Targeting	0	0	2,489	4,970	3,966	990	0	0	12,500
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

FY02 Appropriations Act added \$10.5M for TARS sensor and datalink development, 7.0M for Wideband Integrated CDL and \$3.5M for Laser communications. FY02 Appropriations act removed \$41.0M from JSAF and provided \$16M to PE 0305205F for JSAF HBSS demonstration. This reduction exceeded the FY02 President's budget request for JSAF funding, so additional reduction was allocated to COMPASS BRIGHT. As a result of Congressional action in FY02, the Department moved outyear JSAF funding to PE 0305205F Global Hawk.

(U) **A. Mission Description**  
 This program funds and coordinates the development of advanced defense airborne reconnaissance technologies to ensure systems satisfy strategies and architectures to assure U.S. ability to support warfighter intelligence needs in the face of rapidly developing threat technology, proliferation of advanced weaponry, and uncertain political alignments. This program funds the development of the technologies that respond to evolving threats by emphasizing multi-service utility, interoperability among existing and planned complementary systems (i.e., sensors, ground systems, data links, and manned and unmanned platforms), and timely dissemination of intelligence information to operational forces.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY <b>07 - Operational System Development</b>		PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>			
<b>(U) B. Budget Activity Justification</b>					
This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	136,913	77,766	129,888	TBD
(U)	Appropriated Value	157,913	77,766		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-20,558		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram	-25,750			
	d. Below Threshold Reprogram	-3,141			
	e. Rescissions	-1,449			
(U)	Adjustments to Budget Years Since FY 2002 PBR			-63,078	
(U)	Current Budget Submit/FY 2003 PBR	127,573	57,208	66,810	TBD
<b>(U) Significant Program Changes:</b>					
Line c. Omnibus includes -13,450 that Congress rejected as an omnibus source, but has not been reflected in AF financial databases.					



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>				PROJECT <b>4817</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4817 Joint SIGINT Avionics Family (JSAF)	80,774	0	0	0	0	0	0	Continuing	TBD
<p>The funding for the Joint SIGINT Avionics Family (JSAF) High Band Subsystem (HBSS) was not included in the Fiscal Year 2002 Appropriation Conference Report.</p> <p>The Air Force issued a stop work to the HBSS contractor in response to the Conference language. Professional staff members from the appropriations committees have confirmed that it was Congressional intent to terminate the JSAF Low Band Subsystem (LBSS) program but not the HBSS program. However, in the final Appropriations Conference report, HBSS funding was deleted from the JSAF line and was not fully replaced in any aircraft line.</p> <p>(U) <b><u>A. Mission Description</u></b>                      JSAF was designed to provide for the development of sensor systems to modernize the DOD airborne SIGINT fleet for collection against the 2010 threat.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$45,100 Terminate Low Band Subsystem (LBSS) development and integration</p> <p>(U) \$18,463 Continue High Band Subsystem (HBSS) development and integration</p> <p>(U) \$6,600 Continue EP-3 platform development for JSAF integration and testing</p> <p>(U) \$3,500 Continue ACS platform development for JSAF integration and testing</p> <p>(U) \$1,441 Continue Rivet Joint platform development</p> <p>(U) \$5,670 Continue SPO Operations, Systems Engineering, Program Management Activities</p> <p>(U) \$80,774 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>.</p>									
Project 4817			Page 3 of 26 Pages				Exhibit R-2A (PE 0305206F)		

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>			PROJECT <b>4817</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) None										
<b>(U) D. Acquisition Strategy</b>										
The JSAF acquisition approach emphasized full and open competition for the initial LBSS and HBSS development programs as well as the evolutionary upgrades.										
<b>(U) E. Schedule Profile</b>										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) HBSS FAT					*					
(U) LBSS contract termination							*			
* - Denotes completed event										
X- Denotes planned event										
Project 4817			Page 4 of 26 Pages				Exhibit R-2A (PE 0305206F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>					<b>0305206F Airborne Reconnaissance Systems</b>			<b>4817</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware Development					22,972					
(U)	Software Development					20,419					
(U)	Platform Integration					11,541					
(U)	Integration and Test Support					7,657					
(U)	Systems Engineering					12,515					
(U)	Program Management					5,670					
(U)	Total					80,774					
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	BAE (LBSS)	CPAF	Feb 97	N/A	N/A	104,939	45,100	0			150,039
	TRW (HBSS)	CPAF	Dec 97	110,100	110,100	30,965	18,463	0	0	0	49,428
	M&S	TBD	FY02	TBD	TBD	0	0	0	0	0	0
	Platform Integration (Includes AF, Army, Navy)	Various	Various	TBD	TBD	64,421	11,541	0	0	0	75,962
	<u>Support and Management Organizations</u>										
	Various	Various	Various			19,181	5,670	0	0	0	24,851
	<u>Test and Evaluation Organizations</u>										
	AFFTC Edwards AFB	Project Order	Various				0	0	0	0	0
	.										
Project 4817					Page 5 of 26 Pages			Exhibit R-3 (PE 0305206F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305206F Airborne Reconnaissance Systems</b>			<b>4817</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
		<u>Total</u>	<u>Program</u>			
<u>Subtotals</u>						
Subtotal Product Development		200,325	75,104	0	0	0
Subtotal Support and Management		19,181	5,670	0	0	0
Subtotal Test and Evaluation			0	0	0	0
Total Project		219,506	80,774	0	0	0
JSAF funding was zeroed by Congress in FY02.						
Project 4817		Page 6 of 26 Pages			Exhibit R-3 (PE 0305206F)	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305206F Airborne Reconnaissance Systems</b>				<b>PROJECT</b> <b>4818</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4818    Imaging and Targeting Support	2,104	11,479	15,775	24,374	21,603	25,068	26,549	Continuing	TBD
<p>Note: This project was formerly called Advanced Technology. The name change does not constitute a new start, rather it more correctly describes ongoing activities. Funding for the U-2 Advanced Defense Systems transferred to PE 0305202F beginning in FY01. In FY02 Congressional add of \$10.388M was misdirected into this PE. FY 02 should be \$1091, due to FY02 PB mistake. AF is working a reprogramming action to place this money into correct PE 27217F.</p> <p>(U) <b><u>A. Mission Description</u></b></p> <p>The purpose of the Imaging and Targeting Support (ITS) 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, 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, and other ISR technologies to reduce both target search and kill chain timelines; as well as, supporting traditional intelligence activities. ITS will increase interoperability amongst developed systems by developing common standards and tools. ITS focuses on the following thrust areas:</p> <p>Common IMINT Sensor Development: 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>Sensor Processing and Networking: Development of advanced airborne tactical sensor processing algorithms and tools (e.g., automatic registration, automatic target detection/recognition). These efforts focus on reducing the find, fix and track elements of the time critical targeting kill chain as well as operator and decision-maker workloads through sensor processing techniques.</p> <p>IMINT Systems Engineering: Development of open architecture for tactical sensor models used to improve geolocation accuracies required for precision targeting. Development and implementation of imagery standards (e.g., Common GMTI, NITF for HSI). Monitor and enhance 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>									
Project 4818			Page 7 of 26 Pages				Exhibit R-2A (PE 0305206F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
<b>07 - Operational System Development</b>	<b>0305206F Airborne Reconnaissance Systems</b>	<b>February 2002</b> <b>4818</b>
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$1,248	Sensor Processing and Networking: Continue Airborne Targeting and Cross-Cueing risk reduction efforts - analysis of airborne processing, communication links, and ground processing components and interfaces.	
(U) \$722	IMINT Systems Engineering: Continue evaluation of geolocation sensor models supporting target exploitation tools. Continue development of enhanced geolocation capabilities.	
(U) \$134	SPO Support	
(U) \$2,104	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$50	Common IMINT Sensor Development: Initiate efforts to transition HSI technology and hardware into airborne reconnaissance platforms.	
(U) \$50	Sensor Processing and Networking: Complete Airborne Targeting and Cross-Cueing risk reduction efforts and transfer results and products to the ISR Manager program. Study/demonstrate auto-registration/MASINT tracker technologies.	
(U) \$887	IMINT Systems Engineering: Initiate efforts to build an open architecture for tactical sensor models used to improve geolocation accuracies required for precision targeting. Initiate image quality assessment program.	
(U) \$10,388	Congressional add for Theater Airborne Reconnaissance System.*	
(U) \$104	SPO Support	
(U) \$11,479	Total	
	*Air Force is working a reprogramming action to to submit to OSD to reflect this in proper PE (27217F)	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$5,047	Common IMINT Sensor Development: Continue efforts to transition HSI technology and hardware into airborne reconnaissance platforms.	
(U) \$6,300	Sensor Processing and Networking: Continue to develop near real time image processing capabilities for automated geolocation and automated target detection for future integration on U2 and Global Hawk sensors.	
(U) \$3,700	IMINT Systems Engineering: Deliver initial tactical sensor models (e.g., U2, Global Hawk, Predator). Establish baseline image quality measures and timelines associated with U2 and Global Hawk sensors.	
(U) \$728	SPO Support	
(U) \$15,775	Total	
Project 4818	Page 8 of 26 Pages	Exhibit R-2A (PE 0305206F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>February 2002</b>																																																																																																																																																																									
BUDGET ACTIVITY <b>07 - Operational System Development</b>						PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>						PROJECT <b>4818</b>																																																																																																																																																																							
<p>(U) <b><u>B. Project Change Summary</u></b>                  Network Centric Collaborative Targeting (NCCT) has been realigned under BPAC 675038. This results in a \$12.5M reduction to BPAC 674818 between FY 03-06.</p> <p>Airborne Targeting and Cross-Cueing System (ATACCS) risk reduction efforts will conclude in FY02. The products of this effort will support the ISR Manager and NCCT programs. ATACCS will not proceed to a System Development &amp; Demonstration phase.</p>																																																																																																																																																																																			
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2001</u></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>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>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT &amp; E</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> </tr> </tbody> </table>															<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT & E										(U) Other APPN																																																																																																																																							
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																																																																																										
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<p>(U) <b><u>D. Acquisition Strategy</u></b>                  The 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>																																																																																																																																																																																			
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2001</u></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</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) Common IMINT Sensor 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></td><td></td> </tr> <tr> <td>(U) - SPIRITT Contract option exercised, CDR</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><td></td> </tr> <tr> <td>(U) Sensor Processing and Networking</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><td></td> </tr> <tr> <td>(U) - Multi-Platform Target Exploitation Demo, Final Report</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><td></td> </tr> <tr> <td>(U) - ATACCS Risk Reduction Demos, Contract Comp</td> <td></td><td></td><td>*</td><td></td><td>*</td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Smart Image Processing RFP, Contract Awd</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td>X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) IMINT Systems Engineering</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><td></td> </tr> <tr> <td>(U) - Tactical Sensor Model TRD Contract Awd, Delivery</td> <td></td><td></td><td></td><td></td><td></td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Tactical Sensor Model API Contract Awd, Delivery</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td><td>X</td><td></td><td></td><td></td> </tr> <tr> <td>(U) - Tactical Sensor Model Deliveries</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><td></td> </tr> </tbody> </table>															<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Common IMINT Sensor Development														(U) - SPIRITT Contract option exercised, CDR										X		X		(U) Sensor Processing and Networking														(U) - Multi-Platform Target Exploitation Demo, Final Report				*		X								(U) - ATACCS Risk Reduction Demos, Contract Comp			*		*		X	X						(U) - Smart Image Processing RFP, Contract Awd								X		X				(U) IMINT Systems Engineering														(U) - Tactical Sensor Model TRD Contract Awd, Delivery						X	X							(U) - Tactical Sensor Model API Contract Awd, Delivery							X			X				(U) - Tactical Sensor Model Deliveries										X		X	
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																										
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* - Denotes completed event																																				
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305206F Airborne Reconnaissance Systems</b>				<b>4818</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware and Software Development					1,248		687		8,729	
(U)	Systems Engineering					595		150		3,409	
(U)	Contractor Engineering Support					84		50		2,909	
(U)	Government Engineering Support					50		204		728	
(U)	TARS Reprogramming to PE 27217F					0		10,388		0	
(U)	Total					1,977		11,479		15,775	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon	Various	ongoing	TBD	TBD	2,441				0	2,441
	Lockheed Martin	Various	ongoing	TBD	TBD	1,280				0	1,280
	Veridan					85		843	1,000		1,928
	Northrup Grumman	Various	ongoing	TBD	TBD	1,042	1,211		1,535	Continuing	TBD
	BAE	Various	ongoing	TBD	TBD	0			3,500	Continuing	TBD
	Alphatech	Various	ongoing	TBD	TBD	1,639				0	1,639
	Def Syst Contr - Various	TBD	TBD	TBD	TBD	2,892	183		9,012	Continuing	TBD
	Other	Various	Various	TBD	TBD	979	313			Continuing	TBD
	TARS reprogramming to PE 27217F							10,388			10,388
<u>Support and Management Organizations</u>											
	Other Gov't Orgs	Multiple	Multiple	TBD	TBD	1,387	270	248	728	Continuing	TBD

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							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
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(U) <u>Performing Organizations Continued:</u>									
<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>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>									<u>Total</u>
Subtotal Product Development					10,358	1,707	11,231	15,047	TBD
Subtotal Support and Management					1,387	270	248	728	TBD
Subtotal Test and Evaluation					638				TBD
Total Project					12,383	1,977	11,479	15,775	TBD

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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305206F Airborne Reconnaissance Systems</b>	<b>PROJECT</b> <b>4819</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4819 Common Data Link (CDL)	40,169	45,462	43,664	41,474	37,346	36,265	37,203	Continuing	TBD

(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. The CDL program will maintain design configuration commonality resulting in lower life-cycle costs. The CDL design will permit existing and future reconnaissance assets to operate worldwide, providing sensor data directly to ground sites 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 SIGINT, IMINT (including video), Multi-spectral and other data. CDL concept and technology development and system development and demonstration efforts support continuous improvements and implementation of 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)

(U) **FY 2001 (\$ in Thousands)**

(U) \$2,357 Continue engineering and integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and lease a commercial transponder in support of Global Hawk and studies/analysis of alternative satellite communications to support airborne reconnaissance relay requirements.

(U) \$5,621 Continue development of Tactical CDL demonstration hardware and flight demonstration, and continue to develop design for operational suitability on ISR platforms, including potential flight demonstrations on ARL, GUARDRAIL Legacy Replacement, P-3, EP-3, F/A-18 SHARP, VTUAV, Light Airborne Multi-Purpose System (LAMPS), and ATM interface upgrade.

(U) \$5,855 Continue ABIT technology integration engineering of ABIT in ISR platforms including RC-135 and Global Hawk.

(U) \$3,785 Continue configuration control of CDL architecture, standards, specifications, and modules.

(U) \$4,948 Continue SATCOM interoperability enhancements/Global Grid development.

(U) \$3,180 Continue development of CDL interface to additional platform and surface terminal equipment (eg JSTARS, TARS, CHBDL) and advanced technology insertion activities, and CDL certification test equipment development.

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<b>07 - Operational System Development</b>	<b>0305206F Airborne Reconnaissance Systems</b>	<b>4819</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands) Continued</u></b>		
(U) \$3,423	Continue development of DDL-2.	
(U) \$4,000	Continue High Rate Laser Communications development (Phase I). This funding is an FY01 Congressional Add. This effort was previously in the Imaging and Targeting Support program (PE 0305206F, BPAC 674818).	
(U) \$3,500	Begin development of NCCT wideband integrated common data link. This funding is an FY01 Congressional Add. Follow-on funding will be provided from multiple PEs/BPACs.	
(U) \$3,500	Fund development of wideband integrated common data link for application with NCCT. This funding is an FY01 Congressional Add.	
(U) \$40,169	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$2,600	Continue engineering/integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and lease a commercial transponder in support of Global Hawk and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.	
(U) \$5,810	Continue evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, F-16 TARS, F/A-18 SHARP, TUAV, and VTUAV.	
(U) \$4,930	Continue ABIT (A-Series) technology integration into CDL systems for application to ISR platforms and continue limited ABIT system cost reduction initiatives.	
(U) \$8,177	Continue configuration control of CDL architecture, standards, specification, and modules; provide for Joint-Service interoperability certification and spectrum management.	
(U) \$500	Start development of KGV-135 replacement, initiate CDL migration to DoD network-based encryption architecture.	
(U) \$1,365	Continue development of interface to additional platform and surface terminal equipment (e.g. JSTARS, TARS, CHBDL), advanced technology insertion activities, and CDL certification test equipment development.	
(U) \$9,000	Start MP-CDL (A-Series) development of wideband integrated common data link to support MP-RTIP and NCCT. These funds were added per the FY00 IPDM.	
(U) \$2,580	Complete SATCOM interoperability enhancements/Global Grid development.	
(U) \$7,000	Continue NCCT wideband integrated common data link development This is an FY02 Congressional Plus-up.	
(U) \$3,500	Continue High Rate Laser Communications development (Phase II). This is an FY02 Congressional Plus-up.	
(U) \$45,462	Total	
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305206F Airborne Reconnaissance Systems</b>			<b>PROJECT</b> <b>4819</b>																															
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$2,900      Continue engineering/integration of commercial satellite communication network to support airborne reconnaissance platform relay requirements and lease a commercial transponder in support of Global Hawk and studies and analysis of alternative satellite communications to support airborne reconnaissance relay requirements.</p> <p>(U) \$6,730      Continue evolutionary development of TCDL (T-Series) for operational suitability on ISR platforms such as Guardrail Legacy Replacement, P-3, EP-3, F-16 TARS, F/A-18 SHARP, TUAV, and VTUAV.</p> <p>(U) \$5,000      Continue ABIT(A-Series) technology integration into CDL systems for application to ISR platforms and continue limited ABIT system cost reduction initiatives.</p> <p>(U) \$11,101      Continue configuration control of CDL architecture, standards, specification, and modules; provide for Joint-Service interoperability certification and spectrum management.</p> <p>(U) \$1,000      Continue development of KGV-135 replacement, initiate CDL migration to DoD network-based encryption architecture.</p> <p>(U) \$5,933      Continue development of interface to additional platform and surface terminal equipment (e.g. JSTARS, TARS, CHBDL), advanced technology insertion activities (to include studies and analysis of future data link reqts and architectures), and CDL certification test equipment development.</p> <p>(U) \$10,000      Continue MP-CDL (A-Series) development of wideband integrated common data link to support MP-RTIP and NCCT.</p> <p>(U) \$1,000      Continue NCCT wideband integrated common data link development</p> <p>(U) \$43,664      Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>  FY02 \$7.0M Congressional Plus-up for Wideband Integrated Common Data Link and a \$3.5M Congressional Plus-up to continue development of High Rate Laser Communications.</p> <p>DDL-II development funding was transferred to PE 35202F in FY02.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></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>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>Complete</u></td> <td></td> </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> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) None									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																													
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																														
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
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<b>(U) D. Acquisition Strategy</b>												
The CDL program involves a multitude of technology projects which will provide for a common, interoperable wideband data link standard as mandated by ASD/C3I policy. Funds are provided to various government laboratories and program offices to support new and on-going development efforts. The individual Services use Engineering Change Proposals (ECPs) and modify existing contracts that have been awarded both competitively and on a sole source basis to implement various technology efforts.												
<b>(U) E. Schedule Profile</b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Continue Commercial Satellite Transponder Lease			*			X				X		
(U) Proof of Installation Concept of TCDL on ARL			*									
(U) Complete TCDL environmental hardening					X							
(U) TCDL GPS Backup Start						X						
(U) TCDL GPS Backup Demo												X
(U) TCDL for Army TUAV Demo												X
(U) Final ABIT RC-135 development unit delivery	*											
(U) Initiate/Complete ABIT RC-135 Flight Tests	*											
(U) Initiate ABIT Cost Reduction P3I			*									
(U) Start ABIT P3I Lab Testing							X					
(U) Complete ABIT P3I Testing								X				
(U) Complete ABIT P3I Development									X			
(U) Release MP-CDL RFP						X						
(U) MP-CDL Contract Awards								X				
(U) MP-CDL CDR												X
(U) DDL-II CDR			*									
(U) DDL-II Flight Test Integration Contract Award				*								
(U) Initiate KGV-135 replacement development						X						
(U) Complete KGV-135 replacement design validation/demonstration												X
(U) Begin TIGDL-II Prototype Build					X							
(U) TIGDL-II Demonstration											X	
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<b>(U) <u>E. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
*-Denotes completed event												
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<b>07 - Operational System Development</b>				<b>0305206F Airborne Reconnaissance Systems</b>				<b>4819</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware and Software Development					29,728		32,921		28,663	
(U)	Systems Engineering					2,275		2,000		830	
(U)	Satellite Communications					2,124		2,600		2,900	
(U)	Configuration Management					3,048		2,480		3,884	
(U)	Contractor Engineering Support					721		544		1,128	
(U)	Government Management and Support					2,273		4,917		6,259	
(U)	Total					40,169		45,462		43,664	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
	<u>Product Development Organizations</u>										
	L-3 Communications	Multiple	Multiple			5,499	10,800	5,930	5,415	Continuing	
	Harris Corp	Other	23 Jul 97	TBD	TBD	0	5,028	1,690	415	Continuing	
		Transaction									
	Trex Corp	CPIF		TBD	TBD	0	2,900	3,500	0		
	SATCOM Interop/Global					1,450	4,948	2,580	0	Continuing	
	Grid/Other Govt Orgs										
	MP-CDL Contractor	TBD	Jun 02	TBD	TBD	0	0	9,000	10,000	Continuing	
	COMCEPT	Multiple	Jun 01	TBD	TBD	0	6,243	7,000	1,000	Continuing	
	Other	Multiple	Multiple			0	3,576	8,912	18,176	Continuing	
	<u>Support and Management Organizations</u>										
	SATCOM	FFP	17 Jul 95			8,045	2,357	2,600	2,900	Continuing	
	Various	Multiple	Multiple			2,745	3,887	3,820	4,758	Continuing	



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002		
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT
<b>07 - Operational System Development</b>			<b>0305206F Airborne Reconnaissance Systems</b>				<b>4819</b>
<b>(U) <u>Performing Organizations Continued:</u></b>							
<u>Test and Evaluation Organizations</u>							
JITC	MIPR	FY99	530	430	430	1,000	Continuing TBD
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
			<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>							<u>Total</u>
Subtotal Product Development			6,949	33,495	38,612	35,006	TBD TBD
Subtotal Support and Management			10,790	6,244	6,420	7,658	TBD TBD
Subtotal Test and Evaluation			530	430	430	1,000	TBD TBD
Total Project			18,269	40,169	45,462	43,664	TBD TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>				PROJECT <b>4882</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4882	Compass Bright	4,526	267	4,882	5,048	5,223	5,322	5,423	Continuing	TBD
FY02 funding was decreased to cover Congressional reductions to the Program Element.										
<b>(U) A. Mission Description</b>										
The COMPASS BRIGHT program develops, demonstrates, and rapidly transitions advanced Air Force-specific SIGINT and RF MASINT capabilities against emerging and future target signals.										
<b>(U) FY 2001 (\$ in Thousands)</b>										
(U)	\$4,196	Continue COMPASS BRIGHT development projects (i.e., NexGen Receiver, Active Interference Cancellation, Advanced SIGINT modernization and other projects) development projects								
(U)	\$330	SPO operations, Program Management Activities								
(U)	\$4,526	Total								
<b>(U) FY 2002 (\$ in Thousands)</b>										
(U)	\$267	SPO operations, Program Management Activities								
(U)	\$267	Total								
<b>(U) FY 2003 (\$ in Thousands)</b>										
(U)	\$4,447	Continue COMPASS BRIGHT development projects in the SIGINT, RF MASINT and Unintended Radiated Emissions (URE) areas								
(U)	\$435	SPO operations, Program Management Activities								
(U)	\$4,882	Total								
<b>(U) B. Project Change Summary</b>										
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
Project 4882										

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>						DATE <b>February 2002</b>																																																																																																																					
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>		PROJECT <b>4882</b>																																																																																																																					
<p>(U) <b><u>D. Acquisition Strategy</u></b>                  The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT 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.</p>																																																																																																																											
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></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> </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) Active Interference Cancellation Prototype Testing</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><td></td> </tr> <tr> <td>(U) FY02 Project Proposal Call</td> <td></td><td style="text-align: center;">X</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) FY02 Proposals Evaluated and Approved</td> <td></td><td></td><td style="text-align: center;">X</td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) FY02 Projects Authorized to Proceed</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><td></td> </tr> <tr> <td>(U) FY03 Project Proposal Call</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><td></td> </tr> <tr> <td>(U) FY03 Proposals Evaluated and Approved</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) FY03 Projects Authorized to Proceed</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> </tbody> </table>									<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Active Interference Cancellation Prototype Testing						X							(U) FY02 Project Proposal Call		X											(U) FY02 Proposals Evaluated and Approved			X										(U) FY02 Projects Authorized to Proceed					X								(U) FY03 Project Proposal Call						X							(U) FY03 Proposals Evaluated and Approved							X						(U) FY03 Projects Authorized to Proceed											X	
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Project 4882		Page 21 of 26 Pages				Exhibit R-2A (PE 0305206F)																																																																																																																					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305206F Airborne Reconnaissance Systems</b>				<b>4882</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	COMPASS BRIGHT projects					4,492				4,447	
(U)	SPO Operations/Program Management Activities					330		267		435	
(U)	Total					4,822		267		4,882	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Various	Various	Various	TBD	TBD	0	4,492		4,447	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Various	Various	Various	TBD	TBD	0	330	267	435	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	None										
<b>(U) Government Furnished Property:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>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 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>		<b>0305206F Airborne Reconnaissance Systems</b>			<b>4882</b>		
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
						<u>Total</u>	
	<u>Subtotals</u>					<u>Program</u>	
	Subtotal Product Development	0	4,492		4,447	TBD	TBD
	Subtotal Support and Management	0	330	267	435	TBD	TBD
	Subtotal Test and Evaluation	0					0
	Total Project	0	4,822	267	4,882	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305206F Airborne Reconnaissance Systems</b>	<b>PROJECT</b> <b>5038</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5038 Network Centric Collaborative Targeting	0	0	2,489	4,970	3,966	990	0	0	12,500

Funds were transferred in FY02 from BPAC 674818, Imaging and Targeting Support, for FY03-06.

**(U) A. Mission Description**

The NCCT ACTD will demonstrate technologies and operational concepts required by Joint/Coalition warfighters by providing significant improvements in accuracy and timeliness of time sensitive target identification through 'front end' horizontal integration and collaboration of multiple ISR assets. NCCT will use a spiral development process to integrate demonstrate, and assess the ACTD capabilities over several years. The NCCT prototype network, expanded common network processing, and participant interface modules will be installed on selected ISR platforms and systems for demonstrations during the ACTD timeframe.

**(U) FY 2001 (\$ in Thousands)**

(U) \$0 No Activity  
(U) \$0 Total

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

(U) \$0 No Activity  
(U) \$0 Total

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

(U) \$2,489 Continue development of NCCT core technology.  
(U) \$2,489 Total

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

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305206F Airborne Reconnaissance Systems</b>			PROJECT <b>5038</b>				
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E	3,413	107							3,520		
(U) E-3 AWACS PE 27417F		150	250	500					900		
(U) E-8 JSTARS PE 27581F		250	250	500					1,000		
(U) RC-135 PE 35207F		1,000	1,000	1,000	1,000	100			4,100		
(U) DCGS PE 35208F		5,000							5,000		
(U) CDL PE 35206 (BPAC 4819)		1,000	1,000	1,000	1,000	1,000			5,000		
(U) OSD PE 0603750D		5,000	5,000	5,000	1,000	1,000			17,000		
(U) Other APPN											
NCCT funding supports core technology development and platform integration costs. Funds for platform integration costs will be transferred to appropriate program offices within the Air Force and Army for direct contracting with the platform prime contractors. Army Guardrail and United Kingdom Nimrod are participating in the ACTD.											
<b>(U) D. Acquisition Strategy</b>											
Cost Plus Fixed Fee contracting is used for NCCT core technology development.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Core technology development begins						X					
(U) NCCT - Focused TTP implementation at JCIET 02								X			
(U) NCCT Systems Integration Lab demo									X		
X Denotes Planned Event											
Project 5038			Page 25 of 26 Pages			Exhibit R-2A (PE 0305206F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305206F Airborne Reconnaissance Systems</b>				<b>5038</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Hardware/Software development									2,189
(U)	Systems Engineering									300
(U)	Total									2,489
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ComCept, Inc.	CPFF	FY01	TBD	TBD				2,489	9,926	12,415
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development							2,489	9,926	12,415
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project							2,489	9,926	12,415



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305207F Manned Reconnaissance System				PROJECT 4754			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4754	COBRA BALL	15,357	7,050	0	15,021	13,561	17,082	12,771	0	TBD	
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	
<p>(U) <b><u>A. Mission Description</u></b></p> <p>Laser Ranging and Imaging System (LRIS) -- This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with modifications to the RC-135 or its mission systems. The results of these efforts provide the requisite engineering necessary to implement modifications or provide a preliminary assessment of the technical feasibility, operability, or general military utility of an application. FY99 funds (Congressional plus-up) continues the Laser Ranging and Imaging system for the COBRA Ball platform and includes system testing in Maui. This project has been called the Field Laser Demonstration (FLD) and the Advanced Airborne Sensor (AAS) in past budget documentation. FY05 funds air traffic control and navigational safety non-recurring engineering for the RC-135 fleet.</p> <p>Multi-Function Self-Aligned Gate Technology (MSAG) -- Congress supports the development of the multi-function self-aligned gate active aperture antenna (AAA) technology for use on Reconnaissance aircraft. This system will provide wide-band, duplex, communications links simultaneously to a ground unit, other aircraft, and a satellite surrogate. This electronically steered array is a cost-effective solution to numerous DoD requirements.</p> <p>On-Board Pre-Processing (OBPP) -- The prototype pre-processing effort will develop the capability to screen the data as close to the collection source as possible and advise analysts which data requires immediate expert human intervention. The effort involves the development of an electronic support system and software development.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$5,966                      LRIS (Continuation of Congressionally directed and funded program)</p> <p>(U) \$9,391                      ECARs (Start of FY01 Congressional add)</p> <p>(U) \$15,357                     Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$5,050                      Congressional Add: COBRA BALL Advanced Airborne Sensor (AAS) - \$5.05M</p> <p>(U) \$2,000                      Congressional Add: COMBAT SENT Passive Airborne Ranging - \$2M</p> <p>(U) \$7,050                      Total</p>											
Project 4754				Page 1 of 4 Pages				Exhibit R-2 (PE 0305207F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>			PROJECT <b>4754</b>		
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>									
<b>(U) \$0</b> No Activity									
<b>(U) \$0</b> Total									
<b>(U) <u>B. Budget Activity Justification</u></b>									
This program is budget activity 7, Operational Systems Development, because it involves Air Force R&D to field essential operational capabilities.									
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>									
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>	
<b>(U)</b>	Previous President's Budget			15,357					
<b>(U)</b>	Appropriated Value			15,500	7,100				
<b>(U)</b>	Adjustments to Appropriated Value								
	a. Congressional/General Reductions				-50				
	b. Small Business Innovative Research								
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram								
	e. Rescissions			-143					
<b>(U)</b>	Adjustments to Budget Years Since FY 2002 PBR								
<b>(U)</b>	Current Budget Submit/FY 2003 PBR			15,357	7,050			TBD	
<b>(U)</b>	<u>Significant Program Changes:</u>								
	None								
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
<b>(U)</b>	PE 0305207F, APAF	206,878	243,785	191,080	141,386	147,223	148,360	145,180	TBD
								<u>Cost to Complete</u>	

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0305207F Manned Reconnaissance System</b>	PROJECT <b>4754</b>																																																																																											
<p>(U) <b><u>E. Acquisition Strategy</u></b>                  The RC-135 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 ASC/RA 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 FY02-FY07 include the procurement, fielding and logistical support for three distinct RIVET JOINT baseline configurations [baseline 7, 8 ,9] and two distinct baselines [baselines 2 &amp; 3] for COMBAT SENT. Additional information is available within the classified Congressional budget exhibits.</p>																																																																																													
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></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> </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) Prototype Delivery (LRIS)</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) Engineering Analysis Report (MSAG)</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) Electronic Support System (OBPP)</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) Software Prototype (OBPP)</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 colspan="13">                     * - Denotes completed event                      X - Denotes planned event                 </td> </tr> </tbody> </table>				<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Prototype Delivery (LRIS)													(U) Engineering Analysis Report (MSAG)						*							(U) Electronic Support System (OBPP)		*											(U) Software Prototype (OBPP)						*							* - Denotes completed event X - Denotes planned event												
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																																																				
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																	
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(U) Software Prototype (OBPP)						*																																																																																							
* - 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 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305207F Manned Reconnaissance System				PROJECT 4754		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	System Design and Analysis					7,207	7,050	0		
(U)	Fabrication and Test					3,000				
(U)	Integration and Support					5,150				
(U)	Total					15,357	7,050	0		
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ASC/RAB	Multiple	Aug 97	N/A	N/A	4,795	15,357	7,050	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development				4,795	15,357	7,050	0	TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project				4,795	15,357	7,050	0	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	30,593	16,280	20,708	17,052	15,676	26,135	55,820	Continuing	TBD
4821 Distributed Common Ground System Interoperability	1,579	0	0	0	0	0	0	Continuing	TBD
4826 Common Imagery Ground / Surface Systems	29,014	16,280	20,708	17,052	15,676	26,135	55,820	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY03, AF DCGS anticipates receiving \$18.8M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used for development of increased/improved Geospatial Services and Information (\$3.8M), and dissemination (\$15M) capabilities.

(U) **A. Mission Description**  
 The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance 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 Signal Intelligence (SIGINT); and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT.

(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.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>		<b>0305208F Distributed Common Ground Systems</b>			
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	21,330	11,429	20,708	TBD
(U)	Appropriated Value	30,593	16,429		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-149		
	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 2002 PBR				
(U)	Current Budget Submit/FY 2003 PBR	30,593	16,280	20,708	TBD
(U)	<u>Significant Program Changes:</u>				
	- Congress added \$4.5M in FY01 for Eagle Vision				
	- ISR Manager Congressional plus-up of \$5.0M FY01				
	- USAF added \$21.5M in the FY01-05 budget for Common Imagery Processor				
	- Adjustments in FY02: Eagle Vision funding transfers to PE 27277F (\$1.95M, Time Critical Targeting funding added (\$1.25M), Joint Services Imagery Processing System funding removed (\$3.0M), DCGS/Network Centric Collaborative Targeting modeling and exercise support activities/integration funding added (\$5.0M)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305208F Distributed Common Ground Systems</b>				PROJECT <b>4821</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4821 Distributed Common Ground System Interoperability	1,579	0	0	0	0	0	0	Continuing	TBD
<p>In FY03, AF DCGS anticipates receiving \$18.8M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used for development of increased/improved Geospatial Services and Information (\$3.8M), and dissemination (\$15M) capabilities.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance 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 C4I environment. The interoperability program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for IMINT; Joint Interoperable Operator Network (JION) for SIGINT; and Joint Airborne MASINT Architecture (JAMA) for MASINT. Funds in FY02 and beyond have been moved to DCGS/CIGSS BPAC 674826.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$1,079 Continued evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines.                      (U) \$250 Continued engineering development of NATO interoperability standards.                      (U) \$250 Managed DCGS Infrastructure IPT for ASD/C3I.                      (U) \$1,579 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 Funding moved to DCGS/CIGSS BPAC 674826                      (U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0 Funding moved to DCGS/CIGSS BPAC 674826                      (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p>									
Project 4821			Page 3 of 11 Pages				Exhibit R-2A (PE 0305208F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems				PROJECT 4821	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<b>(U) Other APPN</b> Procurement line is classified.									
<b>(U) D. Acquisition Strategy</b> DCGS interoperability program will use FFRDC, GSA contracts, and competitive processes where possible.									
<b>(U) E. Schedule Profile</b>									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
			1	2	3	4	1	2	3
			1	2	3	4	1	2	3
(U) DCGS Commonality and Interoperability standards			*						
(U) NATO Interoperability Standards			*						
(U) DCGS Infrastructure IPT			*	*	*	*			
*- Denotes Completed Event									
X-Denotes planned event									



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305208F Distributed Common Ground Systems</b>				<b>4821</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Program Management					400				
(U)	System Engineering - Architectures and Interoperability					1,179				
(U)	Total					1,579				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
MITRE	SS,FFP	2Q99	N/A	N/A	800	250				1,050
SAIC	SS,IDIQ	2Q99	N/A	N/A	1,400	647				2,047
Veridian (formerly MRJ)	SS,FFP	2Q99	N/A	N/A	694	400				1,094
Other Non-Prime Gov't	Multiple	2Q99	N/A	N/A	135	82				217
Contracts										
<u>Support and Management Organizations</u>										
SAIC	SS,IDIQ	2Q99	N/A	N/A	400	200				600
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					3,029	1,379				4,408
Subtotal Support and Management					400	200				600
Subtotal Test and Evaluation										
Total Project					3,429	1,579				5,008

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305208F Distributed Common Ground Systems</b>	<b>PROJECT</b> <b>4826</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4826 Common Imagery Ground / Surface Systems	29,014	16,280	20,708	17,052	15,676	26,135	55,820	Continuing	TBD

**(U) A. Mission Description**

DCGS provides systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms, as well as commercial sources. DCGS is a system of systems that does not need to be collocated but must be interconnected by a robust communications structure to provide data streams between intelligence collector, exploiters, producers, disseminators, and users. DCGS has four core locations: two CONUS based and two OCONUS. Other DCGS systems are distributed among Air Force operational units at numbered Air Force level, 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.

DCGS provides significant support to Time Critical Targeting (TCT). This support will be enhanced with integration of software tools and closer integration to AOC tools. ISR Manager will provide the Joint Forces Air Component Commander (JFACC) the capability to dynamically visualize command and control ISR assets and information in the Air Operations Center (AOC), as well as quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TCT process. ISR management requirements previously identified as a FY00 reprogramming request were funded by a Congressional plus-up in the FY01 DoD Supplemental and are included within the AOC (PE 27410F) and DCGS weapons systems for FY02. The Network Centric Collaborative Targeting (NCCT) Advanced Concept Technology Demonstration will provide the Joint Forces commander (JFC) and Component Commanders, in a joint or coalition environment, with a networked capability to rapidly synchronize multiple Intelligence, Surveillance, and Reconnaissance (ISR) sensors on Time Sensitive Targets (TSTs), creating engagement quality information for joint targeting subscribers.

Eagle Vision is a deployable ground station for programming and collecting panchromatic, multispectral, and synthetic aperture radar broad-area imagery from commercial earth remote sensing satellites and processing/merging it with national imagery for mission planning, topographic analysis, and intelligence-gathering purposes. The AF has an operational Eagle Vision system at Ramstein AFB, GE. The Reno ANGB, NV National Eagle (commercial imagery post processing capability) is being upgraded with direct downlink capability along with direct downlink being procured for South Carolina ANG. Reno ANGB, NV also has a processing and exploitation system (networked with other DCGS sites) that supports the Theater Airborne Reconnaissance System (TARS) in addition to other DCGS missions. Eagle Vision transferred from PE 35208F to PE 27277F in FY02. DCGS Interoperability funding transferred to DCGS/CIGSS in FY02.

A mobile CIGSS/DCGS testbed is used by multiple service and agency program offices to test interfaces with new sensors, applications, and other modifications, and

Project 4826 Page 6 of 11 Pages Exhibit R-2A (PE 0305208F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0305208F Distributed Common Ground Systems</b>	<b>4826</b>
<p>(U) <b><u>A. Mission Description Continued</u></b> to support the integration and test of DCGS components prior to introduction into the operational environment.</p> <p>The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within CIGSS architecture. The function of 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 and to migrate CIP to a multi-intelligence processor.</p>		
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>		
(U) \$2,400	Continued CIGSS/DCGS sustaining engineering implementing software upgrades and enhancements to maintain compatibility with changing national/tactical interfaces and increase interoperability with expanding ISR platform/sensor baseline.	
(U) \$1,500	Continued CIGSS/DCGS testbed development.	
(U) \$360	Continued ISR system engineering and technical support.	
(U) \$4,500	Integrated 1 Meter Satellite Upgrade for EV III & IV	
(U) \$1,900	Continued sustaining engineering for commercial satellite imagery ensuring operational usability. Continued integration of new/upgraded commercial imaging satellites.	
(U) \$13,354	Continued evolving CIP to keep pace with growing sensor baseline to include new and upgraded sensors. Implemented initial multi-int processing upgrades and investigated additional multi-int capabilities.	
(U) \$5,000	Develop ISR Manager initial capability.	
(U) \$29,014	Total	
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p>		
(U) \$1,609	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) \$250	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national/tactical interfaces and to increase interoperability with expanding ISR platform/sensor baseline.	
(U) \$1,350	Continue CIGSS/DCGS testbed development.	
(U) \$1,317	Continue 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. Develop additional spirals of ISR Manager.	
(U) \$4,851	Develop and integrate NCCT interfaces and functionality within DCGS. Support ongoing modeling and exercise activities to assist processing	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0305208F Distributed Common Ground Systems</b>			<b>4826</b>			
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2002 (\$ in Thousands) Continued</u></b>										
		and engagement of Time Critical Targets.								
(U)	\$6,903	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 and multi-INT processing upgrades.								
(U)	\$16,280	Total								
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>										
(U)	\$1,608	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)	\$1,500	Continue CIGSS/DCGS testbed development.								
(U)	\$4,929	Continue development of NCCT and 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 ISR Manager spiral development efforts.								
(U)	\$12,671	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 and multi-INT processing upgrades.								
(U)	\$20,708	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN									TBD
	Procurement line is classified.									
<b>(U) <u>D. Acquisition Strategy</u></b>										
	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. ISR Manager also uses a spiral development approach.									
<b>(U) <u>E. Schedule Profile</u></b>										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
	Project 4826									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0305208F Distributed Common Ground Systems</b>					<b>4826</b>				
<b>(U) <u>E. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Integrate/Test changes in testbed		*				X				X				
(U) Assess/integrate national and tactical interface changes to DCGS	*													
(U) Integrate new sensors and sensor modifications into CIP	*				*				X					
(U) Update commercial imagery interface	*													
(U) DCGS technology/software upgrade		*												
(U) DCGS commonality and Interoperability standards					*									
(U) NATO Interoperability Standards					*				X					
(U) DCGS Infrastructure IPT					*	X	X	X	X	X	X	X		
(U) Assess/integrate national and tactical interface changes to DCGS						X								
(U) Develop improved C2 of ISR platforms/sensors						X				X				
*- Denotes Completed Event / X-Denotes planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305208F Distributed Common Ground Systems</b>				<b>4826</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Hardware/Software Development					13,515		9,394		10,887
(U)	System Engineering					7,652		3,767		3,234
(U)	System Integration					5,800		1,609		5,587
(U)	Ancillary Hardware Development					1,047		510		0
(U)	Program Management					1,000		1,000		1,000
(U)	Total					29,014		16,280		20,708
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon, Garland, TX	Multiple	2Q99	N/A	N/A	1,318	2,400	0	0	0	3,718
Northrop Grumman, Baltimore, MD	C, CPFF	2Q99	N/A	N/A	4,896	13,294	6,903	16,550	Continuing	TBD
Lockheed Martin, San Jose, CA	Multiple	2Q99	N/A	N/A	300	300	476	0	0	1,076
TBD for DCGS Upgrades and Migration	TBD	TBD	N/A	N/A	0	0	6,001	1,250	Continuing	TBD
Matra, Velizy, FR	Multiple	1Q00	N/A	N/A	1,384	1,384	0	0	0	2,768
Matra	SS, TBD	3Q00	N/A	N/A	11,886	4,470	0	0	0	16,356
Other Non-Prime Gov't Contracts	TBD	TBD	N/A	N/A	1,122	4,500	0	0	0	5,622
MITRE	SS,CPAF	2Q99	N/A	N/A	456	566	500	0	0	1,522
SAIC	SS, IDIQ	2Q99	N/A	N/A	535	1,100	1,150	0	0	2,785

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2002
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0305208F Distributed Common Ground Systems					4826
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Veridian	C,CPAF	4Q01	N/A	N/A	0	0	250	1,908	Continuing	TBD
<u>Support and Management Organizations</u>										
Other Non-Prime Gov't	TBD	TBD	N/A	N/A	0	1,000	1,000	1,000	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>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					21,897	28,014	15,280	19,708	TBD	TBD
Subtotal Support and Management					0	1,000	1,000	1,000	TBD	TBD
Subtotal Test and Evaluation										
Total Project					21,897	29,014	16,280	20,708	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305906F NCMC - TW/AA System					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19,908	15,350	15,639	18,027	18,043	18,366	18,715	Continuing	TBD
3881 Integrated TW/AA	5,805	0	0	0	0	0	0	0	125,880
4806 N/UWSS NORAD/USSPACECOM Warfighting System	14,103	15,350	15,639	18,027	18,043	18,366	18,715	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Note: In FY 2002, Project 3881, Integrated TW/AA, efforts transferred to Project 4806, N/UWSS, in order to consolidate projects under the ISC2 contract.

(U) **A. Mission Description**  
 This program element funds the evolution of the Commander-in-Chief (CINC) North American Aerospace Defense Command (NORAD)/CINC US Space Command (USSPACECOM) Battle Management/Command, Control, Communications, Computers and Intelligence (BM/C4I) system and its supporting infrastructure into an integrated, flexible, interoperable, and more cost effective architecture. This integrated BM/C4I system includes the Integrated Tactical Warning and Attack Assessment (ITW/AA) command and control systems delivered under the completed Cheyenne Mountain Upgrade (CMU) program. The RDT&E primarily funds integration of these and other existing mission areas to provide a foundation for a fused battlespace picture for the CINC, plus required additional mission capability for the command and control of space forces so that USCINCSpace can better support theater warfighting CINCs.

This program element has two related projects: The first project, Integrated TW/AA, has been the primary source for modernization planning, integration and architecture development of modifications, upgrades and new acquisitions into the larger BM/C4I system. It provides standardization and interoperability among the integrated N/UWSS systems (e.g., ITW/AA, Space Based Infrared Systems (SBIRS) integration, Ground-based Midcourse Missile Defense (GMD), other Force Enhancements and Space Control programs). The second project, the NORAD/USSPACECOM Warfighting Support System (N/UWSS), provides the means by which the CINC's BM/C4I system of systems will evolve to meet CINC/NORAD/USCINCSpace's evolving mission requirements and achieve Defense Information Infrastructure Common Operating Environment (DII COE) compliance. This project 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 Mission Needs Statement (MNS) on 18 May 1998. Command and Control (C2) of Space Forces Operational Requirements Document (ORD) was completed 2nd Qtr FY00.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>			
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305906F NCMC - TW/AA System</b>				
<b>(U) <u>B. Budget Activity Justification</u></b> This program element is in Budget Activity 7, Operational System Development, because the projects in this program element support development acquisition programs or upgrades in support of operational systems.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		19,132	15,797	15,694	TBD
(U) Appropriated Value		19,309	15,797		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions		-135	-447		
b. Small Business Innovative Research		-108			
c. Omnibus or Other Above Threshold Reprogram		-931			
d. Below Threshold Reprogram		1,815			
e. Rescissions		-42			
(U) Adjustments to Budget Years Since FY 2002 PBR				-55	
(U) Current Budget Submit/FY 2003 PBR		19,908	15,350	15,639	TBD
<b>(U) <u>Significant Program Changes:</u></b>					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305906F NCMC - TW/AA System</b>				PROJECT <b>3881</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3881	Integrated TW/AA	5,805	0	0	0	0	0	0	0	125,880
Note: In FY 2002, Project 3881, Integrated TW/AA, efforts transferred to Project 4806, N/UWSS, in order to consolidate projects under the ISC2 contract.										
(U) <b><u>A. Mission Description</u></b> This project was established to integrate new acquisitions such as the Cheyenne Mountain Upgrade (CMU) program into the Integrated Tactical Warning and Attack Assessment ( ITW/AA) network when it became apparent that such efforts could only be achieved through rigorous system-of-systems design and engineering analysis of all interfaces and relationships among the twenty-six systems of the network. The project provides interface analysis and disconnect resolution among the ITW/AA systems and future program upgrades (e.g., Space Based Infrared System (SBIRS) integration, Ground-based Midcourse Missile Defense (GMD), other Force Enhancement and Space Control programs). This project supports the high priority task of integrating modifications, upgrades and new acquisitions for the USCINCSpace fixed site Command and Control (C2) nodes (e.g., Cheyenne Mountain Operations Center & Space Operations Center), component C2 nodes (14th AF Aerospace Operations Center, 20th AF Missile Operations Center) and the mobile C2 node. As USCINCSpace moves toward common infrastructures and open system platforms, this project will integrate those systems into the ITW/AA network through pre-planned vertical release upgrades. This project has been the primary source for modernization planning, integration, and architecture development of modifications, upgrades and new acquisitions into the ITW/AA network.										
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>										
(U)	\$1,858	Continued developing requirements, architecture, and planning for new and upgraded fixed and mobile C2 nodes and sensors including vertical release planning, communications architecture, technology roadmap, and information operations into the ITW/AA network (e.g., SBIRS and GMD).								
(U)	\$2,945	Continued providing systems engineering for new and upgraded fixed and mobile C2 nodes and sensors including integrated scheduling, AUTODIN-R program, SBIRS, and GMD.								
(U)	\$1,002	Continued test planning, execution, and safety for new and upgraded fixed and mobile C2 nodes and sensors including vertical releases, AUTODIN-R program, SBIRS, and GMD.								
(U)	\$5,805	Total								
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>										
(U)	\$0	No activity - This project transferred to N/UWSS project effective in FY02								
(U)	\$0	Total								
Project 3881		Page 3 of 12 Pages				Exhibit R-2A (PE 0305906F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																																																																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305906F NCMC - TW/AA System</b>				PROJECT <b>3881</b>																																																																																																																										
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 No activity - This project transferred to N/UWSS project effective in FY02</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b> Project content and funding transfer to N/UWSS (Project 4806, this PE) effective in FY02.</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></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>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>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other APPN See N/UWSS, Project 4806, this PE.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b> All major contracts within this program element were awarded after full and open competition.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:45%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></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> </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) AUTODIN Transition completed</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) Clear Radar Upgrade Integration completed</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) Continue GMD-BMC3 ITW/AA Integration (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) Continue ITW/AA Air Initiatives (2)</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> <td></td> </tr> <tr> <td>(U) HAVE STARE (FPS-129) Radar Integration completed</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> </tbody> </table> <p>* indicates task completed/X indicates scheduled task</p> <p>(1) - GMD-BMC3 ITW/AA Integration evolving to GMD-BMC3 ITW/AA Integration spiral development under N/UWSS.</p> <p>(2) - ITW/AA Air Initiatives evolving to ITW/AA Air Initiatives spiral development under N/UWSS.</p>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) Other APPN See N/UWSS, Project 4806, this PE.											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) AUTODIN Transition completed	*												(U) Clear Radar Upgrade Integration completed	*												(U) Continue GMD-BMC3 ITW/AA Integration (1)					*								(U) Continue ITW/AA Air Initiatives (2)				*									(U) HAVE STARE (FPS-129) Radar Integration completed					*							
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																																																																									
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																																																																																										
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Project 3881			Page 4 of 12 Pages				Exhibit R-2A (PE 0305906F)																																																																																																																											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305906F NCMC - TW/AA System</b>				<b>3881</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Systems Engineering					1,860					
(U)	SPO Support										
(U)	MITRE					3,178		0		0	
(U)	Aerospace					110		0		0	
(U)	TEMS/ITSP Contracts					496		0		0	
(U)	Program Support					161		0		0	
(U)	Total					5,805		0		0	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	DISA	MIPR	Apr 96	1,328	1,328	1,328	0	0	0	0	1,328
	Lockheed Martin Co Springs, CO	C/CPIF/AF	Jun 95	6,390	6,390	6,390	0	0	0	0	6,390
	Lockheed Martin Sunnyvale, CA	CPIF/AF	Nov 98	2,561	2,561	2,561	0	0	0	0	2,561
	SPAWAR/Navy	MIPR	Nov 98	1,132	1,132	1,132	0	0	0	0	1,132
	DTRA Dulles, VA	MIPR	Apr 99	1,300	1,300	1,300	0	0		0	1,300
	Prime Contractors (Various)	Various	Various	3,412	3,412	1,552	1,860	0	0	0	3,412

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305906F NCMC - TW/AA System</b>				<b>3881</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Support and Management Organizations</u>										
FFRDC	CPFF	Oct 95	62,239	62,239	58,951	3,288	0	0	0	62,239
TEMS/Information	C/R	Various	37,162	37,162	36,666	496	0	0	0	37,162
Technology Services Program										
Contracts										
Program Support	Various	Various	9,544	9,544	9,383	161	0	0	0	9,544
Prime Contractors	Various	Various	812	812	812	0	0	0	0	812
<u>Test and Evaluation Organizations</u>										
None										
<b>(U) <u>Government Furnished Property:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					14,263	1,860	0	0	0	16,123
Subtotal Support and Management					105,812	3,945	0	0	0	109,757
Subtotal Test and Evaluation										
Total Project					120,075	5,805	0	0	0	125,880

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305906F NCMC - TW/AA System</b>	<b>PROJECT</b> <b>4806</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4806 N/UWSS NORAD/USSPACECOM Warfighting System	14,103	15,350	15,639	18,027	18,043	18,366	18,715	Continuing	TBD

Note: In FY 2002, Project 3881, Integrated TW/AA, efforts transferred to Project 4806, N/UWSS, in order to consolidate projects under the ISC2 contract.

**(U) A. Mission Description**

The NORAD/USSPACECOM Warfighting Support System (N/UWSS) provides the future architecture for a NORAD/USSPACECOM Battle Management/C4I system of systems that complies with the Defense Information Infrastructure Common Operating Environment (DII 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. N/UWSS addresses all Commander-in-Chief (CINC) North American Aerospace Defense Command (NORAD)/CINC US Space Command (USSPACECOM) missions including the Integrated Tactical Warning/Attack Assessment (ITW/AA) of missile, space, and air threats and Space Battle Management. N/UWSS will provide NORAD/USSPACECOM a C2 system that is flexible in responding to evolving mission needs (e.g., Space Based Infrared System (SBIRS), Ground-based Midcourse Missile Defense (GMD), Space Control, and Information Operations); is interoperable within the NORAD/USSPACECOM warfighting functions and supporting/supported CINCs; and achieves reductions in total cost of ownership.

The initial scope of N/UWSS will put into place a standards-based, interoperable architecture to support evolution of fixed and endurable C2 nodes to DII COE compliance and develop and integrate new Space C2 capability.

**(U) FY 2001 (\$ in Thousands)**

- (U) \$3,319 Continued Enterprise database infrastructure development
- (U) \$2,835 Continued fused battlespace picture situation monitor and assessment development
- (U) \$2,442 Continued C2 of space forces/threat warning development
- (U) \$3,936 Completed C2 of space forces/space battle manager development to provide theater situational awareness
- (U) \$1,571 Completed C2 of space forces/space operations planning and development of a Space Tasking Order (STO)
- (U) \$14,103 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0305906F NCMC - TW/AA System</b>	<b>4806</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$4,608 Continue Enterprise database infrastructure development and evolve architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP)</p> <p>(U) \$2,844 Continue C2 of space forces/threat warning development</p> <p>(U) \$2,843 Continue evolution of C2 space battle manager through spiral development</p> <p>(U) \$5,055 Continue preliminary N/UWSS 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 N/UWSS network</p> <p>(U) \$15,350 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$4,860 Continue Enterprise database infrastructure development and evolve architecture to incorporate an integrated space, missile, and air mission Common Operating Picture (COP)</p> <p>(U) \$2,822 Continue C2 of space forces/threat warning development</p> <p>(U) \$2,821 Continue evolution of C2 space battle manager through spiral development</p> <p>(U) \$5,136 Continue preliminary N/UWSS 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 N/UWSS network</p> <p>(U) \$15,639 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <ul style="list-style-type: none"> <li>- Project content and funding from Integrated TW/AA (Project 3881, this PE) transferred to this project effective in FY02.</li> <li>- As part of the Total System Performance Responsibility (TSPR) initiative some systems engineering effort formerly performed by FFRDC (MITRE) will be transitioned to the ISC2 contractor (Lockheed Martin).</li> </ul>		
Project 4806	Page 8 of 12 Pages	Exhibit R-2A (PE 0305906F)



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305906F NCMC - TW/AA System</b>				PROJECT <b>4806</b>	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) OPAF (PE 0305906F, Cheyenne Mountain Complex, P-1 Line Item #42, BA 3)	0	26,867	13,808	14,132	14,373	14,615	14,911	Continuing	TBD
(U) OPAF (PE 0305906F, Comm Elect Mods, P-1 Line Item #75, BA 3)	16,226	0	0	0	0	0	0	0	16,226
(U) OPAF (PE 0305906F, Spares and Repair Parts, P-1 Line Item #104, BA 5)	921	679	664	673	680	704	719	Continuing	TBD
<b>(U) D. Acquisition Strategy</b>									
N/UWSS employs an evolutionary spiral development acquisition strategy which enables rapid development and fielding of capability increments in response to validated requirements. Using a spiral development acquisition strategy is critical in a hardware/software intensive C2 system where 12-24 month technology cycles are common.									
N/UWSS uses a performance-oriented contracting strategy with industry, evolving toward Total System Performance Responsibility (TSPR). Contract was awarded in FY00 after full and open competition.									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2
									3
									4
(U) Continue C2 of Space Forces incremental deliveries					*			X	
(U) GMD - BMC3 ITW/AA Integration spiral development deliveries							X		X
(U) ITW/AA Air Initiatives spiral development deliveries								X	X
(U) System Architecture spiral development (1)						*	X	X	X
* Indicates task completion/X indicates scheduled task									
Project 4806			Page 9 of 12 Pages				Exhibit R-2A (PE 0305906F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>																																																	
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<p>(U) <u><b>E. Schedule Profile Continued</b></u></p> <table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></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> </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>1 - ISC2 will provide 6-month spirals to the system architecture.</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>2 - With the continuing slip in the SBIRS program, integration activities have been deleted until such time as final delivery of program dictates.</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> </tbody> </table>				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	1 - ISC2 will provide 6-month spirals to the system architecture.													2 - With the continuing slip in the SBIRS program, integration activities have been deleted until such time as final delivery of program dictates.												
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Project 4806	Page 10 of 12 Pages	Exhibit R-2A (PE 0305906F)																																																	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305906F NCMC - TW/AA System</b>				<b>4806</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Systems Engineering					13,263		12,329		12,575	
(U)	FFRDC					840		2,450		2,499	
(U)	A&AS					0		347		337	
(U)	Program Support					0		224		228	
(U)	Total					14,103		15,350		15,639	
In FY2001, all previous N/UWSS A&AS and Program Support activities moved to Major Contract line (ISC2 contract awarded 19 Sep 00). In FY2002, the A&AS and Program Support for Project 3881 transferred to Project 4806.											
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin	CP/AF	Sep 00	TBD	TBD	929	13,263	12,329	12,575	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	1,542	840	2,450	2,499	Continuing	TBD
	A&AS	CP/FF	Jan 00	TBD	TBD	917	0	347	337	Continuing	TBD
	Program Support	Various	Various	TBD	TBD	162	0	224	228	Continuing	TBD
<u>Test and Evaluation Organizations</u>											
	None										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305906F NCMC - TW/AA System</b>				<b>4806</b>		
<b>(U) Government Furnished Property:</b>										
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development				6,560	13,263	12,329	12,575	TBD	TBD	
Subtotal Support and Management				2,621	840	3,021	3,064	TBD	TBD	
Subtotal Test and Evaluation										
Total Project				9,181	14,103	15,350	15,639	TBD	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	10,829	23,289	21,917	66,632	119,115	159,062	221,380	Continuing	TBD
4279 Have Stare Radar	9,674	5,970	0	0	0	0	0	0	128,773
4791 GEODSS Sustainment	1,155	5,649	0	0	0	0	0	0	12,531
4930 Space Based Space Surveillance	0	2,290	9,959	21,464	47,336	61,030	113,011	Continuing	TBD
5011 Space Situational Awareness Initiatives	0	9,380	11,958	45,168	71,779	98,032	108,369	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD

Note: In FY 2003, 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.

(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 resources and responsibility for completing the HAVE STARE Radar System development were transferred to SPACETRACK from an intelligence program per Congressional direction in FY93.

The GEODSS Sustainment project develops and fields ten Charge-Coupled Device (CCD) cameras for the Ground-Based Electro Optical Deep Space Surveillance (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 Absolute Control Systems (MPACS), as well as sensor controller hardware and associated software.

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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>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 would provide timely space situational awareness to meet future space control operations. The SBSS is a follow-on to a successful Advanced Concept Technology Demonstration (MSX/SBV).</p> <p>The Space Situational Awareness (SSA) Initiatives are a collection of efforts to accelerate the evolution of the Space Surveillance Network (SSN) into a more capable Space Situational Awareness Network (SSAN). The SSAN is a critical element to maintaining Space Control.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></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> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">2,529</td> <td style="text-align: right;">32,591</td> <td style="text-align: right;">6,494</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">2,553</td> <td style="text-align: right;">23,691</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;">-18</td> <td style="text-align: right;">-402</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-14</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">6,400</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">1,914</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-6</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">15,423</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">10,829</td> <td style="text-align: right;">23,289</td> <td style="text-align: right;">21,917</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b></p> <ol style="list-style-type: none"> <li>1. FY01: BTRs and ATR include reprogramming actions for the HAVE STARE radar program to fund restructured program activities after scheduled Initial Operational Capability (IOC) date moved from 4th Qtr FY00 to 2nd Qtr FY02 (See Project 674279, this PE)</li> <li>2. FY03: Adjustment funds Space Based Space Surveillance (See Project 674930, this PE, FY03 funding is \$9.959M). Also, the adjustment funds efforts in FY03 to improve Space Situational Awareness (SSA) (See Project 675011, this PE, FY03 funding is \$11.958M)</li> </ol>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	2,529	32,591	6,494	TBD	(U) Appropriated Value	2,553	23,691			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-18	-402			b. Small Business Innovative Research	-14				c. Omnibus or Other Above Threshold Reprogram	6,400				d. Below Threshold Reprogram	1,914				e. Rescissions	-6				(U) Adjustments to Budget Years Since FY 2002 PBR			15,423		(U) Current Budget Submit/FY 2003 PBR	10,829	23,289	21,917	TBD
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Page 2 of 19 Pages		Exhibit R-2 (PE 0305910F)																																																								

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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305910F SPACETRACK</b>				<b>PROJECT</b> <b>4279</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4279     Have Stare Radar	9,674	5,970	0	0	0	0	0	0	128,773
<p>(U) <b><u>A. Mission Description</u></b>                  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 is being deployed to Vardø, Norway, as a dedicated space surveillance sensor to support the mission of space object catalog maintenance and mission payload assessment. FY00 planned activity was restructured because of failure and loss of the radome. By Sep 00, a new radome had been installed, the electronics re-installed, and initial tracking achieved and DT&amp;E commenced Mar 01. System integration and checkout was completed in FY01. Formal system testing and evaluation will complete in FY02 and the system will be turned over for operational use to the user in 2nd Qtr FY02. The radar will not be a fully integrated element of the Missile Warning Network. The radar will only be integrated with the Space Control Center (Cheyenne Mtn AS, CO) and the Alternate Space Control Center (Dalgren Naval Surface Warfare Center, VA).</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                  (U) \$500                      Continued system development                  (U) \$8,874                    Continued system integration and checkout                  (U) \$300                        Accomplished residual logistics and training                  (U) \$9,674                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                  (U) \$5,470                    Complete formal test and evaluation                  (U) \$500                        Complete logistics tasks                  (U) \$5,970                      Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                  (U) \$0                            No Activity - Project completed in FY02                  (U) \$0                            Total</p>									
Project 4279			Page 3 of 19 Pages				Exhibit R-2A (PE 0305910F)		

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<p>(U) <b><u>B. Project Change Summary</u></b>          FY01: Funds reprogrammed to continue restructured FY00/01 project activities. The radome incident and greater DT&amp;E activity than planned resulted in a change to Initial Operational Capability (IOC) from the 4th Qtr of FY00 to the 2nd Qtr of FY02. Full Operational Capability (FOC) is scheduled for the 4th Qtr of FY02.</p>																																																																								
<p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2001</u></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>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>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> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) None																																											
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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>Complete</u>																																																																
(U) None																																																																								
<p>(U) <b><u>D. Acquisition Strategy</u></b>          The existing contract with Raytheon was modified in the third quarter of FY98 for the dismantling, shipment, and installation of the radar, and will be extended until FY02.</p>																																																																								
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</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) Begin Formal System Testing and Correct Deficiencies</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) Formal System Testing Completed</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 Initial Operational Capability</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> </tbody> </table> <p>* = Complete event          X = Planned event</p>										<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Begin Formal System Testing and Correct Deficiencies		*											(U) Formal System Testing Completed								X					(U) System Initial Operational Capability								X				
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4279			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Site preparation and support					1,500		1,700		0
(U)	Formal system testing					2,817		3,370		0
(U)	Complete open development and testing items					3,309		0		0
(U)	SPO support					2,048		900		0
(U)	Total					9,674		5,970		0
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon Elec Sys	C/CPIF/AF	Mar 91	81,000	81,000	70,743	6,206	3,370	0	0	80,319
Sudbury, MA										
Site Support	Various	Various	N/A	N/A	24,450	1,350	1,700	0	0	27,500
Other PY Organizations			N/A	N/A	2,739	0	0	0	0	2,739
Misc	Various	Various	N/A	N/A	1,185	70	0	0	0	1,255
Prior years data reflects costs since FY94										
<u>Support and Management Organizations</u>										
MITRE	SS/PR	Oct 99	N/A	N/A	4,701	850	220	0	0	5,771
A&AS	C/PR	Various	N/A	N/A	7,508	1,008	500	0	0	9,016
Lincoln Lab	SS/PR	Oct 99	N/A	N/A	558	98	0	0	0	656
Program Office	Various	Various	N/A	N/A	1,145	92	180	0	0	1,417
Misc	Various	Various	N/A	N/A	100	0	0	0	0	100

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Project 4279					Page 6 of 19 Pages			Exhibit R-3 (PE 0305910F)																																																																																																																																																																

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305910F SPACETRACK</b>	<b>PROJECT</b> <b>4791</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4791 GEODSS Sustainment	1,155	5,649	0	0	0	0	0	0	12,531

(U) **A. Mission Description**  
 The GEODSS Sustainment project began in FY00 to develop and field ten Charge-Coupled Device (CCD) Cameras 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 Absolute 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 recently 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.

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$155 Began operational use of Test Bed at Yoder, Colorado  
 (U) \$500 Completed camera design  
 (U) \$500 Tested prototype camera /MPACS  
 (U) \$1,155 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$549 Contingency & closeout efforts on development contractor  
 (U) \$1,500 Complete prototype camera and testing  
 (U) \$3,600 Initial spares (require OPAF vice RDT&E)  
 (U) \$5,649 Total

(U) **FY 2003 (\$ in Thousands)**  
 (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 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>			PROJECT <b>4791</b>		
(U) <b><u>B. Project Change Summary</u></b> \$3.6M in FY02 3600 to purchase initial spares was inadvertently placed in the wrong appropriation due to a database error, convert to OPAF.									
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN								0	0
(U) OPAF (PE 0305910F, Space Mods Space, P-1 Line Item #66, BA 3)*	8,537	8,724	2,406	0	0				19,667
(U) OPAF (PE 0305910F, Spares and Repair Parts,P-1 Line Item #104, BA 5)* * For the GEODSS Sustainment project only	509	27	4,159	588	212			0	5,495
(U) <b><u>D. Acquisition Strategy</u></b> The contract for the GEODSS Sustainment project was awarded after full and open competition									
(U) <b><u>E. Schedule Profile</u></b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2
(U) Prototype Mod Kit Test									
(U) Detail Design Technical Interchange Mtg									
(U) Ops Acceptance of 1st Software Release									
(U) Operational Acceptance at Site 1 (Socorro, NM)							X		
(U) Mod Kit Production Completed									X
* = Complete event X = Planned event									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305910F SPACETRACK</b>				<b>4791</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering					250		80		0	
(U)	Hardware Development					600		1,900		0	
(U)	Software Development					300		0		0	
(U)	Program Office Support					5		69		0	
(U)	Need OPAF for Initial Spares					0		3,600		0	
(U)	Total					1,155		5,649		0	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	TRW, Inc.	SS/CPAF/PR	Mar 00	7,230	7,230	4,100	1,150	1,980	0	0	7,230
<u>Support and Management Organizations</u>											
	MITRE	SS/PR	Jan 00	716	716	700	0	16	0	0	716
	MIT/Lincoln Lab	SS/PR	Feb 00	365	365	365	0	0	0	0	365
	A&AS	C/PR	Mar 00	445	445	400	0	45	0	0	445
	SPO	Various	Jan 00	175	175	162	5	8	0	0	175
<u>Test and Evaluation Organizations</u>											
None											
<b>(U) Government Furnished Property:</b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
Project 4791											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305910F SPACETRACK			PROJECT 4791		
<b>(U) Government Furnished Property Continued:</b>									
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				4,100	1,150	1,980	0	0	7,230
Subtotal Support and Management				1,627	5	69	0	0	1,701
Subtotal Test and Evaluation									
Total Project				5,727	1,155	2,049	0	0	8,931

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>																					
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305910F SPACETRACK</b>				<b>PROJECT</b> <b>4930</b>																					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																				
4930      Space Based Space Surveillance	0	2,290	9,959	21,464	47,336	61,030	113,011	Continuing	TBD																				
<p>(U) <b><u>A. Mission Description</u></b>          The primary mission of the SBSS is to conduct space surveillance which includes collecting, processing, and communicating satellite metric and Space Object Identification (SOI) data on all man-made objects in orbit around the earth. The SBSS will support the attainment of Space Surveillance Key Performance Parameters (KPPs) outlined in the USSPACECOM Capstone Requirements Document (CRD) for Space Control.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$0                      No Activity - Program began in FY02          (U) \$0                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$2,290                  Initiate &amp; Complete Analysis of Alternatives (AoA)          (U) \$2,290                  Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>          (U) \$7,683                  Begin Concept and Technology Development          (U) \$2,276                  Begin System Development and Demonstration planning activities          (U) \$9,959                  Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>          1. FY03-07: Additional funding added to accelerate schedule to meet a FY10 Initial Operational Capability (IOC).          2. Start of Concept Exploration &amp; Technology Development delayed pending results of AoA (per Congressional direction).</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td align="center"><u>FY 2001</u></td> <td align="center"><u>FY 2002</u></td> <td align="center"><u>FY 2003</u></td> <td align="center"><u>FY 2004</u></td> <td align="center"><u>FY 2005</u></td> <td align="center"><u>FY 2006</u></td> <td align="center"><u>FY 2007</u></td> <td align="center"><u>Cost to</u></td> <td align="center"><u>Total Cost</u></td> </tr> <tr> <td></td> <td align="center"><u>Actual</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Estimate</u></td> <td align="center"><u>Complete</u></td> <td></td> </tr> </table> <p>(U) None</p>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																				
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																					
Project 4930			Page 11 of 19 Pages				Exhibit R-2A (PE 0305910F)																						

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>																																																																	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305910F SPACETRACK</b>	<b>PROJECT</b> <b>4930</b>																																																																	
<p>(U) <b><u>D. Acquisition Strategy</u></b>                  The project will begin with an Analysis of Alternatives (AoA) in FY02, continue with Concept Exploration in FY03 and transition to System Development &amp; Demonstration in FY04. Production and Deployment is scheduled for FY06 with launch planned in FY10. Contract vehicle is MAPIC.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></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> </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) Milestone A</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><td></td> </tr> <tr> <td>(U) Begin Concept Exploration &amp; Technology Development</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) Begin System Development and Demonstration planning activities</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 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Milestone A						X							(U) Begin Concept Exploration & Technology Development									X				(U) Begin System Development and Demonstration planning activities												X
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																										
	1	2	3	4	1	2	3	4	1	2	3	4																																																							
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(U) Begin System Development and Demonstration planning activities												X																																																							
Project 4930	Page 12 of 19 Pages	Exhibit R-2A (PE 0305910F)																																																																	



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305910F SPACETRACK</b>				<b>4930</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
(U)	Analysis of Alternatives (AoA)				0		2,146			0	
(U)	Concept Exploration & Technology Development				0		0			6,915	
(U)	System Development and Demonstration planning activities				0		0			2,048	
(U)	Program Office Support				0		144			996	
(U)	Total				0		2,290			9,959	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Multiple contractors	MAPIC	TBD	TBD	TBD	0	0	2,146	8,963	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Program Office	N/A	N/A	N/A	TBD	0	0	144	996	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	None										
<b>(U) Government Furnished Property:</b>											
		<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>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										
Project 4930				Page 13 of 19 Pages				Exhibit R-3 (PE 0305910F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>			<b>February 2002</b> <b>4930</b>	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<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>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	0	2,146	8,963	TBD
	Subtotal Support and Management	0	0	144	996	TBD
	Subtotal Test and Evaluation					
	Total Project	0	0	2,290	9,959	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>				PROJECT <b>5011</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5011      Space Situational Awareness Initiatives	0	9,380	11,958	45,168	71,779	98,032	108,369	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b></p> <p>Space Situational Awareness (SSA) Initiatives are a collection of efforts to accelerate the evolution of the Space Surveillance Network (SSN) into a more capable Space Situational 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 situational 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 Situational Awareness Integration Office (SSAIO), to facilitate architecture development, investment planning, requirements allocation, and systems integration of SSA across DoD and other USG organizations/agencies.</p> <p>The second effort, SSA Command &amp; Control (C2), funds the spiral 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. The telescopes would be geographically separated from Ground Based Electro-Optical Deep Space Surveillance (GEODSS) units to increase coverage and throughput of deep space surveillance. This program would provide a near-term gap filler capability until a Space Based Space Surveillance (SBSS) capability is achieved.</p> <p>The fourth effort involves beginning Concept &amp; Technology Development for sensor Service Life Extension Programs (SLEPs) of critical existing legacy systems.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$0                      No Activity - Project began in FY02</p> <p>(U) \$0                      Total</p>									
Project 5011			Page 15 of 19 Pages				Exhibit R-2A (PE 0305910F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0305910F SPACETRACK</b>			<b>5011</b>		
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>									
(U)	\$2,750	SSAIO stand-up and initial operations in Colorado Springs							
(U)	\$3,748	SSA C2: Begin space surveillance analysis tool improvements and SSN tracking/capacity studies							
(U)	\$2,882	Deep space surveillance augmentation - System Development							
(U)	\$9,380	Total							
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>									
(U)	\$1,500	Provide R&D support to Air Force Space Command funded SSAIO activities							
(U)	\$5,485	SSA C2: Continue space surveillance analysis tool and SSN tracking/capacity improvements							
(U)	\$2,493	Continue System Development of deep space surveillance augmentation							
(U)	\$2,480	Begin sensor Service Life Extension Programs (SLEPs)							
(U)	\$11,958	Total							
<b>(U) <u>B. Project Change Summary</u></b>									
1. FY03-07: Additional funding added to continue FY02 SSA Initiatives efforts. Also, additional funding added to begin Concept & Technology Development for sensor Service Life Extension Programs (SLEPs).									
2. FY02 SSA C2 activities delayed from 1st Qtr FY02 to 2nd Qtr FY02 under CRA new start rules									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN								
(U)	OPAF (PE 0305910F, Space		5,500	4,000	2,000				
	Mods Space, P-1 Line Item								
	#66, BA 3)*								
	* For deep space surveillance augmentation effort only								

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>February 2002</b>																																																																																																													
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0305910F SPACETRACK</b>					PROJECT <b>5011</b>																																																																																																													
<p>(U) <b><u>D. Acquisition Strategy</u></b>                  In FY02, the SSAIO project stood up the office in Colorado Springs, CO, began reviewing/updating FY00 SSTF results, developing a SSA architecture, and initiated discussions with the Services and USG agencies. This effort will provide R&amp;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, analysis and dissemination of space surveillance data evolving to an integrated space surveillance C2 architecture. The Concept &amp; Technology Development continues in FY03 with this effort on the ISC2 contract in FY02 and FY03.</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. Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) technology will be used. The telescopes will be geographically dispersed and operate remotely with no on-site operators. Planned Final Operational Capability (FOC) is FY05. System Development continues in FY03.</p> <p>In FY03, Concept &amp; Technology Development for sensor Service Life Extension Programs (SLEPs) begins in Project 675011.</p>																																																																																																																							
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></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> </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) SSAIO - Office Standup</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><td></td> </tr> <tr> <td>(U) SSA C2 - Analysis tool improvements and SSN studies begin</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><td></td> </tr> <tr> <td>(U) Augment deep space surveillance - MS B</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) Begin sensor SLEPs Concept &amp; Technology 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>* = Complete event</td> <td colspan="13"></td> </tr> <tr> <td>X = Planned event</td> <td colspan="13"></td> </tr> </tbody> </table>															<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) SSAIO - Office Standup						X							(U) SSA C2 - Analysis tool improvements and SSN studies begin						X							(U) Augment deep space surveillance - MS B								X					(U) Begin sensor SLEPs Concept & Technology Development											X		* = Complete event														X = Planned event													
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																																																																														
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																																											
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Project 5011				Page 17 of 19 Pages				Exhibit R-2A (PE 0305910F)																																																																																																															

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305910F SPACETRACK</b>				<b>5011</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	SSAIO Stand-up and initial operations in Colorado Springs					0		2,612		1,420	
(U)	SSA C2 Concept & Technology Development					0		3,564		5,214	
(U)	Deep space surveillance augmentation - System Development					0		2,735		2,363	
(U)	Sensor SLEPs Concept & Technology Development					0		0		2,363	
(U)	Program Office Support					0		469		598	
(U)	Total					0		9,380		11,958	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Multiple Contractors	TBD	TBD	TBD	TBD	0	0	8,911	11,360	Continuing	TBD
	<u>Support and Management Organizations</u>										
	Program Office	N/A	N/A	N/A	TBD	0	0	469	598	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
<b>(U) Government Furnished Property:</b>											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
Project 5011				Page 18 of 19 Pages				Exhibit R-3 (PE 0305910F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305910F SPACETRACK</b>			<b>February 2002</b> <b>5011</b>	
<b>(U) <u>Government Furnished Property Continued:</u></b>						
<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>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	0	0	8,911	11,360	TBD
	Subtotal Support and Management	0	0	469	598	TBD
	Subtotal Test and Evaluation					
	Total Project	0	0	9,380	11,958	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002																																				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305911F Defense Support Program																																								
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																																			
Total Program Element (PE) Cost	12,779	6,142	2,090	0	0	0	0	0	1,928,286																																			
3615 Shield/Alert	7,312	4,048	0	0	0	0	0	0	71,253																																			
3624 Defense Support Program	5,467	2,094	2,090	0	0	0	0	0	1,857,033																																			
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0																																			
<p>(U) <b><u>A. Mission Description</u></b>                      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) is a ground station mission processing capability which exploits inherent satellite capability to provide theater missile warning and cueing.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>                      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).</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td>9,374</td> <td>6,363</td> <td>6,639</td> <td>1,929,651</td> </tr> <tr> <td>(U) Appropriated Value</td> <td>9,462</td> <td>6,363</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>-67</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> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	9,374	6,363	6,639	1,929,651	(U) Appropriated Value	9,462	6,363			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-67				b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																								
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**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0305911F Defense Support Program**

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

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
d. Below Threshold Reprogram	3,405			
e. Rescissions	-21	-221		
(U) Adjustments to Budget Years Since FY 2002 PBR			-4,549	
(U) Current Budget Submit/FY 2003 PBR	12,779	6,142	2,090	1,928,286
(U) <u>Significant Program Changes:</u>				
(U) FY01:				
(1) \$2 million transferred into DSP to support DSP integration into EELV.				
(2) \$1.405 million transferred into DSP to fund Space Based Surveillance Operations ACTD.				
(U) FY03: SHIELD effort transferred to the Space Based Infrared System (SBIRS) High program.				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0305911F Defense Support Program</b>				<b>PROJECT</b> <b>3615</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3615     Shield/Alert	7,312	4,048	0	0	0	0	0	0	71,253
<p>(U) <b><u>A. Mission Description</u></b>          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 are distributed to theater warfighters; they enhance attack operations/counterforce operations by providing accurate, timely launch point estimates and support active and passive defense by providing cueing data to shooters and warning data to theater assets in the form of impact point predictions. Shield has 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.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$4,799                      Continued engineering prototypes and feasibility analysis.          (U) \$1,243                      Continued SBIRS ground consolidation developmental test and evaluation.          (U) \$1,270                      Performed technical analysis and independent verification and validation of contractor.          (U) \$7,312                      Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$2,824                      Continued engineering prototypes and feasibility analysis. Continue SBIRS ground consolidation developmental test and evaluation.          (U) \$1,224                      Performed technical analysis and independent verification and validation of contractor.          (U) \$4,048                      Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>          (U) \$0                              No activity, effort transfered to Space Based Infrared Systems (SBIRS)          (U) \$0                              Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>          (FY03) SHIELD project funds transfered to SBIRS High PE 0604441F as part of the DSP to SBIRS ground consolidation.</p>									
Project 3615			Page 3 of 11 Pages				Exhibit R-2A (PE 0305911F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								<b>DATE</b> February 2002			
<b>BUDGET ACTIVITY</b> 07 - Operational System Development				<b>PE NUMBER AND TITLE</b> 0305911F Defense Support Program				<b>PROJECT</b> 3615			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E											
(U) Other APPN											
(U) Missile Procurement (PE 0305911F, BA-05, P-25)	101,953	108,973	114,382	117,384	35,210	33,358	34,140	0	5,086,969		
(U) Other Procurement (PE 0305911F, BA-03, P-62)	6	0	0	0	0			0	1,201,700		
(U) Related RDT&E:											
(U) PE 0604442F - SBIRS Low EMD (RDT&E, BA-05, R-68)	233,546	0	0	0	0	0	0	0	493,499		
(U) PE 0604441F- SBIRS High EMD (RDT&E, BA-05, R-67) SBIRS Low transferred to BMDO (now Missile Defense Agency)	550,144	438,720	814,927	620,348	445,606	302,997	308,136	578,800	5,769,700		
<b>(U) D. Acquisition Strategy</b>											
The Shield/ALERT Development effort is contracted with Aerojet Electronic Systems Division, Azusa, CA. Initially awarded as part of the Centralized Tactical Processing Program (CTPP) contract in FY95, 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).											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) ALERT Version 14.1.6				*							
(U) ALERT Version 14.1.7						*					
(U) ALERT Version 14.1.8							*				
(U) ALERT Version 14.1.9								*			
(U) ALERT Version 14.1.10									*		
Project 3615				Page 4 of 11 Pages				Exhibit R-2A (PE 0305911F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305911F Defense Support Program</b>				PROJECT <b>3615</b>					
<b>(U) <u>E. Schedule Profile Continued</u></b>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
<b>(U)</b>	Transition to SBIRS												
	* - Completed Event												
	X - Planned Event												
Project 3615										Page 5 of 11 Pages		Exhibit R-2A (PE 0305911F)	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305911F Defense Support Program</b>				<b>3615</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Contractor Engineering Support						3,035		1,200	0	
(U)	Software Development						642		384		
(U)	Program Management Support										
(U)	Training Development										
(U)	Developmental Test and Evaluation						2,365		1,240		
(U)	Federally Funded Research and Development Contractor (FFRDC)						1,270		1,224		
(U)	Total						7,312		4,048	0	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	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	31,429	6,042	2,714	0	0	40,185
	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	10,357	1,270	1,334	0	0	12,961
	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 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0305911F Defense Support Program</b>			<b>3615</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		42,480	6,042	2,714	0	0
Subtotal Support and Management		17,413	1,270	1,334	0	0
Subtotal Test and Evaluation						
Total Project		59,893	7,312	4,048	0	0
						71,253

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305911F Defense Support Program</b>	<b>PROJECT</b> <b>3624</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3624 Defense Support Program	5,467	2,094	2,090	0	0	0	0	0	1,857,033

(U) **A. Mission Description**  
 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 changes associated with Advanced Concept Technology Demonstration (ACTD), and 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.

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$2,000 High Altitude Network Determination System (HANDS)  
 (U) \$1,405 Space Based Space Surveillance ACTD  
 (U) \$2,062 Continued integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV).  
 (U) \$5,467 Total

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$2,094 Continued integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV).  
 (U) \$2,094 Total

(U) **FY 2003 (\$ in Thousands)**  
 (U) \$2,090 Complete integration efforts for DSP 23 on Evolved Expendable Launch Vehicle (EELV).  
 (U) \$2,090 Total

(U) **B. Project Change Summary**  
 (FY01) Congress set aside \$2 million for High Altitude Network Determination System (HANDS).  
 (FY01) \$1.405 million transferred to support Space Surveillance ACTD.



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								<b>DATE</b> February 2002	
<b>BUDGET ACTIVITY</b> 07 - Operational System Development				<b>PE NUMBER AND TITLE</b> 0305911F Defense Support Program				<b>PROJECT</b> 3624	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Missile Procurement (PE 0305911F, BA-05, P-28)	101,953	108,973	114,382	117,384	35,210	33,358	34,140	0	5,086,969
(U) Other Procurement (PE 0305911F, BA-65, P-N/A)	6	0	0	0	0			0	1,201,700
(U) Related RDT&E:									
(U) PE 0604442F - SBIRS Low EMD	233,546							0	493,499
(U) PE 0604441F - SBIRS High EMD SBIRS Low transferred to BMDO.	550,144	438,720	814,927	620,348	445,606	302,997	308,136	578,800	5,769,700
<b>(U) D. Acquisition Strategy</b>									
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.									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3	4	1 2 3	4	1 2 3	4
(U) DSP 21 Launch					*				
(U) DSP 22 Launch									X
(U) DSP 23 Launch (FY04)									
* - Completed Event									
X - Planned Event									
Project 3624			Page 9 of 11 Pages				Exhibit R-2A (PE 0305911F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305911F Defense Support Program</b>				<b>3624</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Space-Based Space Surveillance Operations ACTD*					1,405		0		0
(U)	High Altitude Network Determination System					2,000		0		0
(U)	DSP 23 Integration on EELV-Heavy					2,062		2,094		2,090
(U)	Total					5,467		2,094		2,090
*Funding of effort shared with BMDO (now the Missile Defense Agency). See Project Change Summary for funding details.										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>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			0	1,536,317
Boeing	FFP	Jul 00	7,346	7,346	1,100	2,062	2,094	2,090	0	7,346
Aerojet*	C/CPAF	Oct 93	25,719	25,719	25,719	0			0	25,719
Aerojet	C/CPAF	Sep 93	9,025	9,025	9,025	0			0	9,025
Aerojet	C/CPFF		25,743	25,743	25,743	0			0	25,743
Aerojet	C/CPAF	Oct 96	2,578	2,578	2,578	0			0	2,578
Loral	C/FPI/AF/CPF		37,732	37,732	37,732	0			0	37,732
DOE	P.O.		10,724	10,724	10,724	0			0	10,724
Loral	C/CPAF		22,975	22,975	22,975	0			0	22,975

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0305911F Defense Support Program</b>				<b>3624</b>		
<b>(U) Performing Organizations Continued:</b>										
* EAC is also funded by other appropriations.										
<u>Support and Management Organizations</u>										
Various	MIPRs	As needed			6,301	3,405		0	9,706	
Aerojet	C/ CPFF		1,305	1,305	1,305	0		0	1,305	
Aerojet/						0		0	0	
Consolidated	C/ FFP	Oct 96	4,724	4,724	4,724	0		0	4,724	
FFRDC	MORD		N/A	N/A	42,109	0		0	42,109	
Other Gov't Cost			N/A	N/A	35,036	0		0	35,036	
TRW	C/CPFF		9,872	9,872	9,872	0		0	9,872	
TRW Consolidated	C/CPAF	Oct 96	292	292	292	0		0	292	
PRC	C/FPIF	Apr 94	7,579	7,579	7,579	0		0	7,579	
SPARTA	C/CPAF	Aug 94	150	150	150	0		0	150	
<u>Test and Evaluation Organizations</u>										
Program Office Support	Various	As needed	N/A	N/A	68,101	0		0	68,101	
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					1,671,913	2,062	2,094	2,090	0	1,678,159
Subtotal Support and Management					107,368	3,405			0	110,773
Subtotal Test and Evaluation					68,101	0			0	68,101
Total Project					1,847,382	5,467	2,094	2,090	0	1,857,033

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305913F NUDET Detection System (Space)</b>	<b>PROJECT</b> <b>2808</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2808 Nuc Detonation Det Sys (sensors)	14,908	21,525	21,180	25,944	23,706	24,126	24,815	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 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 DSP satellites (neutrons and gamma rays). The ground segment includes the Integrated Correlation and Display System (ICADS) and the Ground NDS Terminals (GNT).

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 satellites to GPS Space and Control (PE 0305165F), with ground segment development remaining in the NDS PE.

(U) **FY 2001 (\$ in Thousands)**

(U) \$9,571	Continued ICADS and GNT development
(U) \$1,309	Continued NDS sensor on-orbit qualification
(U) \$3,651	Continued Space Long Range Planning
(U) \$377	Continued Mission Support requirements
(U) \$14,908	Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0305913F NUDET Detection System (Space)</b>		<b>2808</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$16,045	Continue ICADS and GNT development			
(U)	\$1,244	Continue NDS sensor on-orbit qualification			
(U)	\$948	Continue Mission Support and system studies			
(U)	\$3,288	Continue Technical Support			
(U)	\$21,525	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U)	\$15,498	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)	\$21,180	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7 - Operational System Development because it is a post-Milestone III program.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	11,977	18,823	19,980	TBD
(U)	Appropriated Value	12,088	21,823		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-111	-298		
	b. Small Business Innovative Research	-791			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	3,722			
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2002 PBR			1,200	
(U)	Current Budget Submit/FY 2003 PBR	14,908	21,525	21,180	TBD
Project 2808		Page 2 of 6 Pages		Exhibit R-2 (PE 0305913F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0305913F NUDET Detection System (Space)</b>				PROJECT <b>2808</b>	
(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>									
(U) <b><u>Significant Program Changes:</u></b> FY02 Congressional add of \$3,000K for EMP. FY03 adjustment of \$1,200K transfers EMP funding from National Foreign Intelligence Program (NFIP) line to NDS line where it is managed.									
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Operations & Maintenance, (PE 0305913F, BA 1, Operating Forces	7,223	4,736	8,653	8,145	8,981	9,227	9,442	Continuing	Continuing
(U) Missile Procurement, (PE 0305913F, BA 5 - Space and Other Support, P-23)	16,965	18,933	0	0	0	0	0	0	35,898
(U) Other Procurement, (PE 0305913F, BA 3 - Electronics and Telecom Equipment, P-58)	2,571	8,411	7,937	12,666	11,853	12,289	12,597	Continuing	Continuing
(U) Related RDT&E:									
(U) PE 0305165F, NAVSTAR GPS (Space/Ground Segment)									
(U) PE 0305911F, Defense Support Program									
(U) <b><u>E. Acquisition Strategy</u></b> The NDS Acquisition Strategy is to develop and procure components to sustain the U. S. NDS capability for the GPS Block IIR and IIF 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.									
Project 2808			Page 3 of 6 Pages				Exhibit R-2 (PE 0305913F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0305913F NUDET Detection System (Space)</b>					<b>2808</b>		
<b>(U) <u>F. Schedule Profile</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) GPS IIR O&M (S/W Modifications)	*	*	*	*								
(U) ICADS Operational Strings move to SBIRS Facility						X						
(U) GPS IIF Use Case Model Review	*		*			X		X		X		X
(U) GPS IIF System Specification Review						X				X		
(U) GPS IIF Phase Review	*		*		*		X		X		X	
* = Completed Event; X = Planned Event												
Project 2808				Page 4 of 6 Pages				Exhibit R-2 (PE 0305913F)				



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0305913F NUDET Detection System (Space)			PROJECT 2808			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	ICADS and GNT development					8,427		16,045		15,498	
(U)	NDS sensor on-orbit qualification					1,309		1,244		1,189	
(U)	Mission support requirements and system studies					377		948		1,100	
(U)	Technical support					1,144		3,288		3,393	
(U)	Space Long Range Planning					3,651		0		0	
(U)	Total					14,908		21,525		21,180	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
										<u>Total</u>	
										<u>Program</u>	
<u>Product Development Organizations</u>											
	Sandia National Labs	MIPR	Oct 94			44,790	7,984	16,045	15,498	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			4,344	443	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	CPFF	Aug 94	415	415	415	0	0	0	0	415
	Rsch Inst.)										
	Los Alamos Natl Lab	MIPR	Jan 96			4,077	1,309	1,244	1,189	Continuing	TBD
<u>Support and Management Organizations</u>											
	Mission Support	Multiple	N/A			3,602	377	948	1,100	Continuing	TBD
	Prog Contractual Spt.	Multiple	Various	1,534	1,534	1,534	3,651	0	0	0	5,185
	Technical Support	Multiple	Various	N/A	N/A		1,144	3,288	3,393	Continuing	TBD
Project 2808											
Page 5 of 6 Pages											
Exhibit R-3 (PE 0305913F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0305913F NUDET Detection System (Space)</b>				<b>2808</b>			
<b>(U) <u>Performing Organizations Continued:</u></b>											
<u>Test and Evaluation Organizations</u>											
Hill AFB Utah				9	9	9	0	0	0	0	9
<b>(U) <u>Government Furnished Property:</u></b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					61,486	9,736	17,289	16,687	TBD	TBD	
Subtotal Support and Management					5,136	5,172	4,236	4,493	TBD	TBD	
Subtotal Test and Evaluation					9	0	0	0	0	9	
Total Project					66,631	14,908	21,525	21,180	TBD	TBD	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	1,118	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD
1011 Legacy Model Transition (LMT)	382	0	0	0	0	0	0	Continuing	TBD
4566 Executive Agent for Air/Space Natural Environment	736	0	0	0	0	0	0	Continuing	TBD
5052 JTC/SIL MUSE	0	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY2002, Project 671011, Legacy Model Transition (LMT) and Project 674566, Executive Agent for Air/Space natural Environment efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675004, Joint Model Transition (JMT) and Project 675005, Executive Agent For Air/Space Natural Environment, in order to consolidate small dollar Modeling, Simulation, and Analysis (MS&A) R&D programs. This will meet the intent of the House action to eliminate smaller PEs and provide a more cohesive, manageable USAF Modeling and Simulation development effort.

In, FY2003, Project 675052, JTC/SIL MUSE efforts were transferred from PE 03052051F, Endurance Unmanned Aerial Vehichles, Project 674883, JTC/SIL MUSE in order to comply with 1999 PBD 220

(U) **A. Mission Description**  
 This PE includes funding to support an organized growth and management of modeling and simulation (M&S) systems as the Air Force transitions from numerous legacy models and simulations to emerging DoD standard models and architecture. Numerous models currently exist and are being modified or developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as the Legacy Model Transition) funds the upgrades to selected R&D models through a board process. The selection process allows the board to influence the direction of legacy model development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. The Executive Agent for Air & Space Natural Environment (ASNE) serves the M&S community as subject matter experts for ASNE M&S databases (including relevant standards), dynamic processes, and other applications. This enables the major Joint simulation systems (i.e., Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>																																																								
<p>(U) <b><u>A. Mission Description Continued</u></b>                  Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Ballistic Missile Defense Organization (BMDO), etc.) to represent the air and space natural environment rapidly, thoroughly, and consistently in a manner that promotes cost-effectiveness, ready access, interoperability, re-use, and confidence. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.</p> <p>All FY02-07 RDT&amp;E funding in PE: 38601F - 'Modeling and Simulation Support' will be transferred to PE: 27601F - 'USAF Modeling and Simulation'. In the interim, FY01 RDT&amp;E funding in PE: 38601F is needed to continue integrating and developing numerous AF models and simulations into emerging DoD standard models and architecture. Added, FY01 PE: 38601 RDT&amp;E funding provides modeling and simulation development efforts to digitally represent air and space natural environments integrated into the major Joint simulation systems (ie. Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS)).</p>																																																									
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is in budget activity 7 - Operational System Development, because these funds support development activity for the AF as executive agent for air/space natural environment and continued development and integration of AF models in the Joint Model Transition (JMT) program.</p>																																																									
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1,177</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,995</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">1,177</td> <td style="text-align: center;">0</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 style="text-align: center;">-36</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 style="text-align: center;">-11</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-12</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">1,118</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,995</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,177	0	1,995	TBD	(U) Appropriated Value	1,177	0			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-36				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-11				e. Rescissions	-12				(U) Adjustments to Budget Years Since FY 2002 PBR			0		(U) Current Budget Submit/FY 2003 PBR	1,118	0	1,995	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
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(U) Adjustments to Budget Years Since FY 2002 PBR			0																																																						
(U) Current Budget Submit/FY 2003 PBR	1,118	0	1,995	TBD																																																					
<p>(U) <b><u>Significant Program Changes:</u></b>                  FY00 funding eliminated.</p>																																																									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0308601F Modeling and Simulation Support</b>				PROJECT <b>1011</b>		
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1011 Legacy Model Transition (LMT)	382	0	0	0	0	0	0	Continuing	TBD	
<p>In, FY2002, Project 671011, Legacy Model Transition (LMT) efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675004, Joint Model Transition (JMT) in order to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <b><u>A. Mission Description</u></b>                      Numerous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) Program (formerly known as Legacy Model Transition) supports the development and upgrade of R&amp;D models selected through a board process. The selection process allows the board to influence the direction of model development and integration for the modeling and simulation community. Emphasis is placed on joint applicability and acceptance. All FY02-07 RDT&amp;E funding in PE: 38601F will be transferred to PE: 27601F, titled 'USAF Modeling and Simulation'.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$151 Develop and integrate service analysis models into next generation joint models.                      (U) \$151 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).                      (U) \$80 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs. DSMs digitally represent weapon system platforms and are used to evaluate existing platform capabilities against new threats, ability to upgrade weapon systems to satisfy new requirements, etc. Results of AoAs using DSMs are used as a decision tool to determine future weapon system developments and/or upgrades.                      (U) \$382 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      Project transferred to PE27601F for FY02</p>										
Project 1011	Page 3 of 11 Pages								Exhibit R-2A (PE 0308601F)	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>				<b>PROJECT</b> <b>1011</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E								Continuing	Continuing		
(U) Other APPN											
	N/A										
<b>(U) D. Acquisition Strategy</b>											
The funds are provided to the Office of Aerospace Studies (OAS), GSA-Heartland Contract, and the Sherikon Corp for the development of the Next Generation Mission Model (NGMM), Joint Model Transition Plan, and Analysis of Alternatives (AoA) studies for analysis models and digital system models. AF/XOCA will oversee a prioritization process for contract selection and development effort.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Fund Next Generation Mission Model project (Phase I completed 1QFY99)			X								
(U) Develop AoA studies for standard toolkit (Phase I completed 1QFY99)			X								
(U) Integrate models (P1 completed 4QFY99)							X				
Project 1011				Page 4 of 11 Pages				Exhibit R-2A (PE 0308601F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0308601F Modeling and Simulation Support</b>			<b>1011</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Contractor Support					306				
(U)	Program Management Support					30				
(U)	Travel					46				
(U)	Total					382				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various			0	382			Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development				0	382			TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project				0	382			TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>				<b>PROJECT</b> <b>4566</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4566 Executive Agent for Air/Space Natural Environment	736	0	0	0	0	0	0	Continuing	TBD
<p>In FY2002, Project 674566, Executive Agent for Air/Space Natural Environment efforts transferred to PE 0207601F, USAF Modeling and Simulation, Project 675005, Executive Agent For Air/Space Natural Environment to provide a more cohesive, manageable Modeling, Simulation and Analysis effort.</p> <p>(U) <b><u>A. Mission Description</u></b>          Air Force Director of Weather (AF/XOW) is designated as the DoD Modeling and Simulation Executive Agent (MSEA) for Air and Space Natural Environment (ASNE). This program provides funds for MSEA joint wargaming architecture, data base, model development support for Joint Warfare Simulation (JWARS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and other joint M&amp;S program offices. Primary users will be unified commanders and service components for use in joint exercises involving air, ground, sea, and space campaigns. All FY02-07 RDT&amp;E funding in PE: 38601F will be reprogrammed in the FY02-07 POM cycle to PE: 27601F, titled 'USAF Modeling and Simulation'.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$128 Space weather prototyping and integration          (U) \$505 Production center model development          (U) \$103 Air/Space/Land battlefield weather effects integration          (U) \$736 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$0 No Activity          (U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>          (U) \$0 No Activity          (U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>          Project transferred to PE27601F for FY02</p>									
Project 4566			Page 6 of 11 Pages				Exhibit R-2A (PE 0308601F)		



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0308601F Modeling and Simulation Support</b>			PROJECT <b>4566</b>		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E								Continuing	Continuing
(U) Other APPN									
<b>(U) D. Acquisition Strategy</b>									
The Executive Agent for Air & Space Natural Environment will develop, prototype, and integrate the current suite of production and research grade models for Service and Joint distributed simulation models. The majority of efforts are executed and managed through the DoD laboratory system.									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) Architecture - ESG IOC (Completed 3QFY99)									
(U) Architecture - ESG FOC						X			
(U) Models - CSSMS FOC						X			
(U) Models - ISM IOC						X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0308601F Modeling and Simulation Support</b>				<b>4566</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Software Development					211				
(U)	Lab Overhead/Management					80				
(U)	Prototyping					420				
(U)	Travel					25				
(U)	Total					736				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various				736			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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						736			TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						736			TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0308601F Modeling and Simulation Support</b>	<b>PROJECT</b> <b>5052</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5052      JTC/SIL MUSE	0	0	1,995	1,988	1,983	1,979	1,975	Continuing	TBD

In, FY2003, Project 675052, JTC/SIL MUSE efforts transferred from PE 03052051F, Endurance Unmanned Aerial Vehicles, Project 674883, JTC/SIL MUSE in order to comply with 1999 PBD 220

**(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 2001 (\$ in Thousands)**

**(U)** \$0                      No Activity  
**(U)** \$0                      Total

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

**(U)** \$0                      No Activity  
**(U)** \$0                      Total

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

**(U)** \$1,995                  JTC/SIL MUSE  
**(U)** \$1,995                  Total

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

A separate project code within PE 38601F provides visibility of the funds supporting the JTC/SIL MUSE. This account serves as a holding location for funds support this Joint effort.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308601F Modeling and Simulation Support			PROJECT 5052		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E								Continuing	Continuing
(U) Other APPN									
<b>(U) D. Acquisition Strategy</b>									
N/A									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) Activity TBD									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0308601F Modeling and Simulation Support</b>			<b>5052</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U) JTC/SIL MUSE									1,995	
(U) Total									1,995	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
JTC/SIL MUSE								1,995	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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development								1,995	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project								1,995	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0308699F Shared Early Warning System</b>				PROJECT <b>4838</b>			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4838	Shared Early Warning System	7,591	3,660	4,027	3,319	3,416	3,480	3,531	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) <b><u>A. Mission Description</u></b>                      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. CINCs and other policy makers strongly support these efforts based on political and operational benefits. In December 1998, SEWS was established as a formal DoD program with the Air Force as the lead service and 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 &amp; Development Centers (FFRDC) and Systems Engineering and Technical Assistance contractors); design, development, and acquisition of a common SEWS architecture; coordination, maintenance, and sustainment of the existing systems hardware and software; design, development, test, and installation of a Joint Data Exchange Center (JDEC) in Moscow; development and maintenance of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System information; and site preparation/installation for additional systems, as required.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$3,153 Completed design and continued to develop a common SEWS architecture                      (U) \$1,887 Continued design and test of a JDEC and Pre-Launch Notification System in Moscow                      (U) \$2,551 Began common architecture installation at additional SEWS sites (to include existing SEWS sites worldwide)                      (U) \$7,591 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$1,407 Continue to develop a common SEWS architecture                      (U) \$1,757 Continue design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow                      (U) \$51 Implement Pre-Launch Notification System in additional countries as required                      (U) \$445 Install SEWS at additional sites as negotiated by SECDEF                      (U) \$3,660 Total</p>											
Project 4838				Page 1 of 5 Pages				Exhibit R-2 (PE 0308699F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0308699F Shared Early Warning System</b>	PROJECT <b>4838</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$1,491 Complete design, test, and installation of a JDEC and Pre-Launch Notification System in Moscow</p> <p>(U) \$1,182 Install SEWS at additional sites as negotiated by SECDEF</p> <p>(U) \$1,354 Continue to develop a common SEWS architecture</p> <p>(U) \$4,027 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></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) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">4,180</td> <td style="text-align: center;">3,697</td> <td style="text-align: center;">4,041</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">4,219</td> <td style="text-align: center;">3,697</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: center;">-30</td> <td style="text-align: center;">-37</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-290</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 style="text-align: center;">3,701</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-9</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">-14</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">7,591</td> <td style="text-align: center;">3,660</td> <td style="text-align: center;">4,027</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b></p> <p>FY01 BTR: Funded startup of the Joint Data Exchange Center (JDEC) and Pre-Launch Notification System in Moscow and system design and software development for SEWS</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	4,180	3,697	4,041	TBD	(U) Appropriated Value	4,219	3,697			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-30	-37			b. Small Business Innovative Research	-290				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	3,701				e. Rescissions	-9				(U) Adjustments to Budget Years Since FY 2002 PBR			-14		(U) Current Budget Submit/FY 2003 PBR	7,591	3,660	4,027	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	4,180	3,697	4,041	TBD																																																					
(U) Appropriated Value	4,219	3,697																																																							
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a. Congressional/General Reductions	-30	-37																																																							
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(U) Adjustments to Budget Years Since FY 2002 PBR			-14																																																						
(U) Current Budget Submit/FY 2003 PBR	7,591	3,660	4,027	TBD																																																					
Project 4838	Page 2 of 5 Pages	Exhibit R-2 (PE 0308699F)																																																							



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0308699F Shared Early Warning System				PROJECT 4838	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) OPAF (PE 0308699F, Comm Elect Mods, P-1 Line Item #75, BA 3)		199	1,689	199	298	1,584	297	Continuing	TBD
<b>(U) E. Acquisition Strategy</b>									
The Integrated Space Command and Control (ISC2) contract is employed as an evolutionary spiral development acquisition strategy that enables rapid development and fielding of an initial capability in response to validated requirements. 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. The ISC2 contract is a performance-oriented contract vehicle that drives Total System Performance Responsibility to industry.									
<b>(U) F. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2
								3	4
(U) Complete common system architecture design						*			
(U) Install JDEC and Pre-Launch Notification System (1)							X		
(U) Incremental development of common system architecture			*		*		X	X	X
(U) Standardization of additional sites with developed architecture					*			X	X
* indicates task completed/X indicates scheduled task									
(1) JDEC and Pre-Launch Notification System installation delayed from 4th quarter FY01 to 3rd quarter FY02 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 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0308699F Shared Early Warning System</b>				<b>4838</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Various Contracts					3,802		1,285		1,783
(U)	JDEC					1,887		1,757		1,491
(U)	System Engineering					1,687		430		510
(U)	Program Management Administration (PMA)					215		188		243
(U)	Total					7,591		3,660		4,027
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin	CP/AF	Sep 00	TBD	TBD	2,618	1,553	1,458	1,705	Continuing	TBD
SPAWAR	MIPR	Nov 99	552	552	447	75	0	0	0	522
NRO	MIPR	Dec 99	TBD	TBD	3,270	714	180	230	Continuing	TBD
Various Ctrs/Gov Agencies	MIPR/AF	Nov 99	TBD	TBD	2,108	3,202	529	665	Continuing	TBD
<u>Support and Management Organizations</u>										
FFRDC	CPFF	Jan 00	TBD	TBD	1,065	245	195	0	Continuing	TBD
A&AS	C/R	Apr 00	TBD	TBD	778	1,449	985	1,006	Continuing	TBD
PMA	N/A	Jan 00	TBD	TBD	667	215	188	243	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFSPC 17th Test Squadron	AF	Sep 00	TBD	TBD	160	138	125	178	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0308699F Shared Early Warning System			4838		
<b>(U) Government Furnished Property:</b>									
	<u>Contract</u>	<u>Award or</u>							
<u>Item</u>	<u>Method/Type</u>	<u>or Funding</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				8,443	5,544	2,167	2,600	TBD	TBD
Subtotal Support and Management				2,510	1,909	1,368	1,249	TBD	TBD
Subtotal Test and Evaluation				160	138	125	178	TBD	TBD
Total Project				11,113	7,591	3,660	4,027	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401115F C-130 AIRLIFT SQUADRONS</b>	<b>PROJECT</b> <b>4885</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4885 Avionics Modernization Program (AMP)	63,286	59,928	158,978	180,534	159,874	141,626	113,723	38,127	936,126
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY 2003, Project 4726, Avionics Modernization Program (AMP), was changed to Project 4885 (same name) to correct an administrative error. This action did not change program content nor 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 519 C/AC/EC/HC/LC/MC-130s that are not being replaced with new C/EC/WC-130Js. These mandated mods are incorporated in conjunction with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include: TCAS, 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 give the AF's 519 C/AC/EC/HC/LC/MC-130s complete access to the GATM-controlled international air space.

The USAF 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 unit/aircraft interoperability at forward operating locations. C-130 AMP standardizes the cockpit configurations and avionics for these different variants by installing a core avionics package and a single cockpit configuration, eliminating many of these significant logistics, interoperability and training problems. (Note: The new C/EC/WC-130J aircraft are not included in this C-130 AMP program).

The funding shown here and in the C-130 AMP procurement documentation (P-Docs) is for AMP and those portions of USSOCOM's Common Avionics Architecture for Penetration (CAAP) modification, which are incorporated into AMP. However, SOCOM's CAAP-unique portion is funded in MFP-11, and these funds are not shown here.

The Boeing Company was awarded the AMP contract on 30 July 01. Their program provides the NRE for all the C-130 variants and modifies the entire fleet. Each 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.

Boeing will conduct a Training System Requirements Analysis (TSRA), beginning in FY01. 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. The training requirement defined through the TSRA may require additional funding.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401115F C-130 AIRLIFT SQUADRONS</b>	
		PROJECT <b>4885</b>
(U) <b><u>A. Mission Description Continued</u></b>		
	Development activities in FY02 will focus on two areas: AMP 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, which will be integrated into the special mission aircraft concurrent with AMP. NOTE: The majority of AMP (to include efforts associated with AFSOC aircraft) will be funded by MFP 6; MFP 11 funds CAAP efforts only (\$13M in FY02).	
(U) <b><u>FY 2001 (\$ in Thousands)</u></b>		
(U) \$52,573	Award EMD contract. Begin design and software development. This includes beginning detailed group A & B design series, hardware/software development of crew station modules/computer simulation, initiate design of system integration lab (SIL), begin the TSRA and begin CAAP's Risk Mitigation testing.	
(U) \$10,713	Program office support ( TDY, training and supplies).	
(U) \$63,286	Total	
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$45,235	Contractor continues program staffing and ramp-up. Continues design and software development. This includes continuing detailed group A & B (A is acft wiring and install points, B are the actual avionics boxes) design series, hardware/software development of crew station modules/computer simulation, design of system integration lab (SIL), development of training system, and continue CAAP Risk Mitigation testing. The Systems Requirements Review (SRR), System Design Review (SDR) and Software Specification Review (SSR) are projected to be completed in FY02 for the C-130 AMP configuration and SOF AMP/CAAP configuration. NOTE: The \$20M cut in FY02 was due to late contract award. Efforts associated with these funds were slipped into FY03.	
(U) \$7,200	Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee	
(U) \$1,020	Developmental Test and Evaluation	
(U) \$6,473	Program office support ( TDY, training and supplies).	
(U) \$59,928	Total	
(U) <b><u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$125,538	Ramp up and design specification will be substantially completed in FY03 allowing software coding at proceed full speed and developmental hardware acquisition to begin. Detailed design work will continue for both Group A and B equipment on follow on MDS'. We will continue development of the training systems based on the results of the Training Systems Requirements Analysis (TSRA) scheduled to be complete in the 3rd Quarter of FY 2003. Preliminary Design Review (PDR) and Critical Design Review (CDR) for both the C-130 Core and SOF AMP will be completed in FY03. New efforts will include the acquisition of avionics hardware to support the software integration efforts associated	
Project 4885	Page 2 of 6 Pages	Exhibit R-2 (PE 0401115F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401115F C-130 AIRLIFT SQUADRONS</b>	<b>PROJECT</b> <b>4885</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2003 (\$ in Thousands) Continued</u></b></p> <p style="padding-left: 40px;">with both the Core Operational Flight Program (OFF) and the Combat Talon OFF. After completion of the software design as documented by the CDR for the C-130 core and SOF AMP variants, we will begin coding and unit testing for the software integration facility. Efforts will begin for trail installs of the AC-130 and HC-130 in FY05. Software and avionics account for approximately 50% of the FY03 budget.</p> <p>(U) \$16,510 Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee</p> <p>(U) \$4,700 Developmental Test and Evaluation</p> <p>(U) \$5,370 Training System development upgrades</p> <p>(U) \$6,860 Program office support ( TDY, training and supplies).</p> <p>(U) \$158,978 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>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 C/AC/EC/LC/MC/-130 fleet of AF aircraft.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">60,496</td> <td style="text-align: center;">80,533</td> <td style="text-align: center;">158,978</td> <td style="text-align: center;">936,126</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">60,496</td> <td style="text-align: center;">60,533</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;">-423</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-1,840</td> <td style="text-align: center;">-605</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 style="text-align: center;">-131</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: center;">5,184</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">63,286</td> <td style="text-align: center;">59,928</td> <td style="text-align: center;">158,978</td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b></p> <p>On 30 Jul 01, C-130 AMP contract awarded to Boeing. Congress reduced the FY 02 Program by \$20M based on a late contract award date. The program has ramped up rapidly to compensate for the late initial award expects to be ready for all scheduled FY03 events.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	60,496	80,533	158,978	936,126	(U) Appropriated Value	60,496	60,533			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-423				b. Small Business Innovative Research	-1,840	-605			c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-131				(U) Adjustments to Budget Years Since FY 2002 PBR	5,184				(U) Current Budget Submit/FY 2003 PBR	63,286	59,928	158,978	
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Project 4885	Page 3 of 6 Pages	Exhibit R-2 (PE 0401115F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development				0401115F C-130 AIRLIFT SQUADRONS			4885		
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) PE 0401115F, Avionics Modernization Program (AMP), BP1100					112,800	139,470	221,853	3,067,000	3,541,123
<b>(U) E. Acquisition Strategy</b>									
The C-130 AMP contract was awarded 30 July 2001. The contract is a Cost Plus Award Fee contract to develop AMP kits for the 15 MDSs within the AF 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 Weapons Systems Trainers to the AMP configuration.									
<b>(U) F. Schedule Profile</b>									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) C-130 AMP Contract Award*						X			
(U) C-130 Systems Requirements Review**							X		
(U) C-130 Preliminary Design Review (PDR)								X	
(U) C-130 SOF AMP PDR									X
(U) CDR AMP Hardware									X
(U) CDR AMP Software									X
(U) CDR SOF Hardware									X
(U) Dev Activities - AC-130 & HC-130								X	
* Contract awarded July 2001; ** SRR completed November 2001									



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0401115F C-130 AIRLIFT SQUADRONS</b>				<b>4885</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	C-130 AMP System Development & Demonstration (SDD)					48,535		43,335		125,538	
(U)	Program Office Support					7,216		6,473		6,280	
(U)	GFE					310		520		0	
(U)	ECO					3,610		3,700		7,640	
(U)	Developmental Test and Eval					35		1,020		4,700	
(U)	Training System Upgrade					0		0		5,950	
(U)	Award Fee					3,580		4,880		8,870	
(U)	Total					63,286		59,928		158,978	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
Prime Contractor	CPAF	30 Jul 01				52,573	53,040	147,780	560,307	813,700	
Note: The Boeing Company won the competition for this program and was awarded 30 Jul 01.											
<u>Support and Management Organizations</u>											
Program Support Office	N/A	N/A				10,713	5,868	6,498	31,477	54,556	
<u>Test and Evaluation Organizations</u>											
Various							1,020	4,700	62,150	67,870	
Project 4885						Page 5 of 6 Pages			Exhibit R-3 (PE 0401115F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0401115F C-130 AIRLIFT SQUADRONS</b>			<b>4885</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development		52,573	53,040	147,780	560,307
	Subtotal Support and Management		10,713	5,868	6,498	31,477
	Subtotal Test and Evaluation			1,020	4,700	62,150
	Total Project		63,286	59,928	158,978	653,934
						936,126

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	91,925	154,944	277,795	293,138	461,254	352,711	59,940	0	1,787,492
4495 Avionics Modernization Program	49,191	64,240	41,697	20,277	0	0	0	0	252,497
4835 Reliability Enhancement & Reengining Program	42,734	90,704	236,098	272,861	461,254	352,711	59,940	0	1,534,995
Quantity of RDT&E Articles	0	0	0	4	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 mid-air collisions and controlled flight into terrain. 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 is accelerated to complete ahead of the rest of the AMP mod (by FY02). Two AMP RDT&E test articles were funded in FY99 for flight test and installation in FY02.

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 available (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 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

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																								
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<p>(U) <b><u>A. Mission Description Continued</u></b>  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. Four RDT&amp;E test articles are funded in FY04 for flight test and installation in FY05/06.</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>  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.</p> <p>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.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: right; width: 15%;"><u>FY 2001</u></th> <th style="text-align: right; width: 15%;"><u>FY 2002</u></th> <th style="text-align: right; width: 10%;"><u>FY 2003</u></th> <th style="text-align: right; width: 10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">92,530</td> <td style="text-align: right;">166,508</td> <td style="text-align: right;">226,968</td> <td style="text-align: right;">1,052,090</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">92,530</td> <td style="text-align: right;">156,508</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: right;">-1,564</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-3,759</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">5,000</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-700</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-848</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: right;">-298</td> <td></td> <td style="text-align: right;">50,827</td> <td style="text-align: right;">735,402</td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">91,925</td> <td style="text-align: right;">154,944</td> <td style="text-align: right;">277,795</td> <td style="text-align: right;">1,787,492</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b>  Since FY02 PB:  C-5 AMP:  - Adjustments (+\$31.7M) were made to the FY03 program as a result of a cost overrun disconnect and in-scope changes. Additionally, an adjustment for nonpay purchases inflation (-\$0.1M) was made in FY03.</p> <p>C-5 RERP:</p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	92,530	166,508	226,968	1,052,090	(U) Appropriated Value	92,530	156,508			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-1,564			b. Small Business Innovative Research	-3,759				c. Omnibus or Other Above Threshold Reprogram	5,000				d. Below Threshold Reprogram	-700				e. Rescissions	-848				(U) Adjustments to Budget Years Since FY 2002 PBR	-298		50,827	735,402	(U) Current Budget Submit/FY 2003 PBR	91,925	154,944	277,795	1,787,492
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Page 2 of 14 Pages		Exhibit R-2 (PE 0401119F)																																																								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY	PE NUMBER AND TITLE	
<b>07 - Operational System Development</b>	<b>0401119F C-5 Airlift Squadrons</b>	
<p>(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b></p> <p>(U) <b><u>Significant Program Changes Continued:</u></b></p> <ul style="list-style-type: none"><li>- After the FY02 Appropriation, Congress made a General Reduction to RDT&amp;E funds (-\$1.6M) for FY02.</li><li>- RERP acquisition strategy was revised, which resulted in a commensurate reduction in RDT&amp;E funds (-\$24.4M) in FY03. Additionally, A&amp;AS service was decreased (-\$0.1M) and adjustments in nonpay purchases inflation (-\$0.6M) were made in FY03.</li><li>- After RERP completed MS B, additional funds (+\$44.3M) were added to FY03 to match the OSD Cost Analysis Improvement Group (CAIG) estimates.</li></ul>		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401119F C-5 Airlift Squadrons</b>				PROJECT <b>4495</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4495      Avionics Modernization Program	49,191	64,240	41,697	20,277	0	0	0	0	252,497
<p>(U) <b><u>A. Mission Description</u></b>          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 mid-air collisions and controlled flight into terrain. 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 is accelerated to complete ahead of the rest of the AMP mod (by FY02). Two AMP RDT&amp;E test articles were funded in FY99 for flight test and installation in FY02.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$7,000                      System Engineering / Program Management          (U) \$29,100                    AMP Kit Design / Development          (U) \$10,200                    Prototype Fabrication / Install          (U) \$2,891                      Mission Support          (U) \$49,191                    Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$14,300                    System Engineering/Program Management          (U) \$27,491                    AMP Kit Design/Development          (U) \$12,950                    Prototype Fabrication/Install          (U) \$3,699                      Mission Support          (U) \$5,800                      Flight Test          (U) \$64,240                    Total</p>									
Project 4495			Page 4 of 14 Pages				Exhibit R-2A (PE 0401119F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>				<b>0401119F C-5 Airlift Squadrons</b>				<b>4495</b>	
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>									
(U)	\$5,600	Systems Engineering/Program Management							
(U)	\$24,000	AMP Kist Design/Development							
(U)	\$3,000	Prototype Fabrication/Install							
(U)	\$5,429	Mission Support							
(U)	\$3,668	Flight Test							
(U)	\$41,697	Total							
<b>(U) <u>B. Project Change Summary</u></b>									
Since FY02 PB:									
C-5 AMP:									
- Adjustments (+\$31.7M) were made to the FY03 program as a result of a cost overrun disconnect and in-scope changes. Additionally, an adjustment for nonpay purchases inflation (-\$0.1M) was made in FY03.									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E								
(U)	Other APPN								
(U)	PE# 0401119F/C-5 Airlift Squadrons								
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11	33,003	19,386	78,123	121,585	87,263	19,841		390,946
(U)	PE# 0401119F/C-5 Airlift Squadrons								
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability	0	0	0	0	0	140,600	462,517	Continuing
Project 4495									
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Exhibit R-2A (PE 0401119F)									

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401119F C-5 Airlift Squadrons</b>				PROJECT <b>4495</b>					
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>				
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>					
Enhancement and Reengining Program, BP-11													
<b>(U) D. Acquisition Strategy</b>													
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 (LRU) 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 are scheduled to complete in FY02 on all 126 C-5 aircraft. The complete AMP modification is planned for the entire C-5 fleet.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>				
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	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 (FY02/4)									X			
(U)	AMP Prototype Installation Start (FY02/3)						X						
(U)	First Flight / Developmental Test Start (FY03/2)										X		
(U)	Production Installation Start (FY04/3)												
(U)	Prod Installation Complete (FY07/1)												
	* = completed event												
	X = planned event												
Project 4495		Page 6 of 14 Pages						Exhibit R-2A (PE 0401119F)					



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0401119F C-5 Airlift Squadrons</b>				<b>4495</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering / Program Management					7,000		14,300		5,600	
(U)	AMP Kit Design / Development					29,100		27,491		24,000	
(U)	Prototype Fabrication / Install					10,200		12,950		3,000	
(U)	Mission Support					2,891		3,699		5,429	
(U)	Flight Test					0		5,800		3,668	
(U)	Total					49,191		64,240		41,697	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Lockheed Martin Aero	C/CPAF	Jan 99		220,955	71,122	46,300	54,741	32,600	16,192	220,955
	<u>Support and Management Organizations</u>										
	WR-ALC/LA				7,370	2,570	1,200	1,200	1,800	600	7,370
	ASC/GRA				12,779	3,400	1,691	2,499	3,629	1,560	12,779
	<u>Test and Evaluation Organizations</u>										
	418 Test Squadrn (Edwards AFB)	AFFTC			11,393	0	0	5,800	3,668	1,925	11,393
<b>(U) Government Furnished Property:</b>											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
Project 4495											
Page 7 of 14 Pages											
Exhibit R-3 (PE 0401119F)											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons			PROJECT 4495	
<b>(U) Government Furnished Property Continued:</b>								
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development				71,122	46,300	54,741	32,600	16,192
Subtotal Support and Management				5,970	2,891	3,699	5,429	2,160
Subtotal Test and Evaluation				0	0	5,800	3,668	1,925
Total Project				77,092	49,191	64,240	41,697	20,277
				<u>Total</u>				<u>Program</u>
								220,955
								20,149
								11,393
								252,497

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401119F C-5 Airlift Squadrons</b>	<b>PROJECT</b> <b>4835</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4835 Reliability Enhancement & Reengining Program	42,734	90,704	236,098	272,861	461,254	352,711	59,940	0	1,534,995

(U) **A. Mission Description**  
 674835: Reliability Enhancement and Reengining 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 available (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 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. Four RDT&E test articles are funded in FY04 for flight test and installation in FY05/06.

- (U) **FY 2001 (\$ in Thousands)**  
 (U) \$10,180 System Engineering / Program Management  
 (U) \$28,870 RERP Kit Design / Development  
 (U) \$0 Prototype Fabrication / Install  
 (U) \$3,684 Mission Support  
 (U) \$42,734 Total

- (U) **FY 2002 (\$ in Thousands)**  
 (U) \$15,211 System Engineering/Program Management  
 (U) \$51,398 RERP Kit Design/Development  
 (U) \$17,000 Prototype Fabrication/Install  
 (U) \$4,659 Mission Support  
 (U) \$2,436 Government Test Support  
 (U) \$90,704 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0401119F C-5 Airlift Squadrons</b>				<b>4835</b>		
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>										
(U)	\$23,800	System Engineering/Program Management								
(U)	\$158,526	RERP Kit Design/Development								
(U)	\$44,300	Prototype Fabrication/Install								
(U)	\$3,100	Mission Support								
(U)	\$6,372	Government Test Support								
(U)	\$236,098	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
Since FY02 PB:										
C-5 RERP:										
- After the FY02 Appropriation, Congress made a General Reduction to RDT&E funds (-\$1.6M) for FY02.										
- RERP acquisition strategy was revised, which resulted in a commensurate reduction in RDT&E funds (-\$24.4M) in FY03. Additionally, A&AS service was decreased (-\$0.1M) and adjustments in nonpay purchases inflation (-\$0.6M) were made in FY03.										
- After RERP completed MS B, additional funds (+\$44.3M) were added to FY03 to match the OSD Cost Analysis Improvement Group (CAIG) estimates.										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E									
(U)	Other APPN									
(U)	PE# 0401119F/C-5 Airlift Squadrons									
(U)	Aircraft Procurement, AF, BA-5, C-5 Mods, Reliability Enhancement and Reengining Program, BP-11	0	0	0	0	0	140,600	462,517	Continuing	Continuing
(U)	PE# 0401119F/C-5 Airlift Squadrons									
Project 4835										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY <b>07 - Operational System Development</b>			PE NUMBER AND TITLE <b>0401119F C-5 Airlift Squadrons</b>				PROJECT <b>4835</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Aircraft Procurement, AF, BA-5, C-5 Mods, Avionics Modernization Program, BP-11	33,003	19,386	78,123	121,585	87,263	19,841		0	390,946	
<b>(U) D. Acquisition Strategy</b>										
Reliability Enhancement and Reengining 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. Congress directed Air Force to include at least 1 C-5A in SDD. 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.										
<b>(U) E. Schedule Profile</b>										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(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)(FY03/1)								X		
(U) Critical Design Review (CDR)(FY03/4)										X
(U) First Prototype Flight (FY05/4)										
(U) MS C (FY07/1)										
(U) SDD Complete (FY07/4)										
Project 4835										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002					
BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT					
<b>07 - Operational System Development</b>	<b>0401119F C-5 Airlift Squadrons</b>						<b>4835</b>					
<b>(U) <u>E. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) LRIP Kit Installations Begin (FY07/4)												
(U)	* = completed event X = planned event											
Project 4835			Page 12 of 14 Pages				Exhibit R-2A (PE 0401119F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0401119F C-5 Airlift Squadrons</b>				<b>4835</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering / Program Management					10,180		15,211		23,800	
(U)	RERP Kit Design / Development					28,870		51,398		158,526	
(U)	Prototype Fabrication / Install							17,000		44,300	
(U)	Mission Support					3,684		4,659		3,100	
(U)	Government Test Support							2,436		6,372	
(U)	Total					42,734		90,704		236,098	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin Aero (Pre-EMD)	FFP	Feb 00		53,833	14,783	39,050	0	0	0	53,833
	Lockheed Martin Aero (SDD) CPAF		Dec 01		1,422,901	0	0	83,609	226,526	1,112,766	1,422,901
<u>Support and Management Organizations</u>											
	WR-ALC/LA				7,700	600	1,200	1,200	1,000	3,700	7,700
	ASC/GRA				16,353	1,210	2,484	3,459	2,200	7,000	16,353
<u>Test and Evaluation Organizations</u>											
	418 Test Squadron (Edwards AFB)	AFFTC			34,208	2,100	0	2,436	6,372	23,300	34,208
Project 4835				Page 13 of 14 Pages				Exhibit R-3 (PE 0401119F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401119F C-5 Airlift Squadrons			PROJECT 4835		
<b>(U) Government Furnished Property:</b>									
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				14,783	39,050	83,609	226,526	1,112,766	1,476,734
Subtotal Support and Management				1,810	3,684	4,659	3,200	10,700	24,053
Subtotal Test and Evaluation				2,100	0	2,436	6,372	23,300	34,208
Total Project				18,693	42,734	90,704	236,098	1,146,766	1,534,995



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	168,010	109,513	157,213	135,674	155,094	145,043	109,701	0	7,206,187
2569 C-17 Aircraft	123,127	109,513	157,213	135,674	155,094	145,043	109,701	0	7,161,304
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	44,883	0	0	0	0	0	0	0	44,883
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

FY02 and later funds for LAIRCM were ZBT'ed to PE 41134F.

(U) **A. Mission Description**  
 Airlift provides a major element of America's national security strategy and constitutes the most responsive means of meeting U.S. mobility requirements. 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. The load options include troops and/or outsized/oversized/palletized cargo. The C-17 is designed to provide direct delivery of those cargo loads to austere airfields, as close as possible to the user's specified final destination. The C-17 will also use standard airfields and delivery modes. The C-17 is specifically designed to provide U.S. combat forces maximum flexibility in the selection of landing sites and support of ground forces after landing. Consequently, the C-17 will land with up to 160,000 lbs payload on austere runways as small as 3,000 feet by 90 feet. The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide transport and tanker aircraft an effective, active defense against shoulder-launched IR missiles

(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 February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>	<b>0401130F C-17 Aircraft</b>			
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	174,821	110,619	108,434	7,157,408
(U) Appropriated Value	168,010	110,619		TBD
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-1,106		
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 2002 PBR			48,779	48,779
(U) Current Budget Submit/FY 2003 PBR	168,010	109,513	157,213	7,206,187
(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 ZBT's to PE 41134F.				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0401130F C-17 Aircraft</b>				<b>PROJECT</b> <b>2569</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2569      C-17 Aircraft	123,127	109,513	157,213	135,674	155,094	145,043	109,701	0	7,161,304
<p>(U) <b><u>A. Mission Description</u></b>  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. Additional airlift capability is needed for rapid deployment of combat forces in support of national objectives. Specific tasks associated with the airlift mission include deployment, employment (airland and airdrop), sustaining support, retrograde, and combat redeployment. 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. 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&amp;E efforts support producibility enhancements and performance improvements, including correction of Operational Test &amp; Evaluation (OT&amp;E) deficiencies.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>  (U) \$65,949            Performance Improvement Development &amp; Testing  (U) \$29,756            Systems Engineering / Program Management  (U) \$16,422            Contractor System Test &amp; Evaluation  (U) \$11,000            Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test  (U) \$123,127           Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>  (U) \$55,828            Performance Improvement Development &amp; Testing  (U) \$30,400            Systems Engineering / Program Management  (U) \$13,285            Contractor System Test &amp; Evaluation  (U) \$10,000            Producibility Enhancement / Performance Improvement (PE/PI) Government Flight Test  (U) \$109,513           Total</p>									
Project 2569			Page 3 of 12 Pages				Exhibit R-2A (PE 0401130F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft				PROJECT 2569	
(U) <b><u>A. Mission Description Continued</u></b>									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U)	\$94,276	Performance Improvement Development & Testing							
(U)	\$37,609	Systems Engineering/Program Management							
(U)	\$15,117	Contractor System Test & Evaluation							
(U)	\$10,211	Producibility Enhancement/Performance Improvement (PE/PI) Government Flight Test							
(U)	\$157,213	Total							
(U) <b><u>B. Project Change Summary</u></b>									
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	APAF, MYP, BA02, PE0401130F	2,462,380	3,170,487	3,086,030	2,625,229	2,821,298	2,843,380	25,696,642	42,705,446
(U)	APAF, ICS, PE0401130F	411,293	481,763	612,452	775,613	789,918	770,467	662,674	4,504,180
(U)	APAF, A/C Mods, BA05, PE0401130F	81,297	96,693	93,873	163,568	225,515	245,315	265,318	1,171,579
(U)	MilCon, Facilities, PE0401130F	15,689	40,983	55,200	84,500	61,800	59,200	148,800	466,172
(U)	Construction (Planning and Design), PE091211F		1,150						1,150
(U) <b><u>D. Acquisition Strategy</u></b>									
<p>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&amp;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 (for aircrew simulators, training &amp; concurrency upgrades), and a maintenance training device contract (for devices &amp; concurrency upgrades of same) - (APAF).</p>									
Project 2569			Page 4 of 12 Pages				Exhibit R-2A (PE 0401130F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002																																																																																																																																																														
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																																																																																																																																														
<b>07 - Operational System Development</b>					<b>0401130F C-17 Aircraft</b>					<b>2569</b>																																																																																																																																																														
<p>(U) <b><u>D. Acquisition Strategy Continued</u></b>                      The congressionally mandated Mobility Requirements Study (MRS), initially forwarded to Congress on 23 Jan 92 and updated on 28 Mar 95, 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&amp;T) Acquisition Decision Memoranda (ADMs), 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 (FY03-08 Quantity): 4-10-11-12-14-9.</p> <p>During FY03 the Air Force will also ensure continued evaluation of commercial C-17 Civil Reserve Air Fleet (CRAF) applications and feasibility. The Air Force will also evaluate business cases for implementation of aircraft service agreements with commercial providers. If the potential business case meets established financial goals for the program and the required congressional authority is provided, the Air Force will implement commercial airlift services agreements.</p>																																																																																																																																																																								
<p>(U) <b><u>E. Schedule Profile</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="4"><u>FY 2001</u></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</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) Incremental Funding of Ongoing Performance Improvement Projects (FY01)</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) Incremental Funding of Ongoing Performance Improvement Projects (FY02)</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) Software Block 16 - 1st Year Award (FY02)</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) Stabilizer Struts Phase 1 - 1st Year Award (FY02)</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) Aircraft Wireless Intercom System (AWIS) (FY03)</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></td> </tr> <tr> <td>(U) APU Independent Fuel and Fire Shutoff (AIFFS) (FY03)</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></td> </tr> <tr> <td>(U) Crew Armor Protection Phase II (12.7 mm) (FY03)</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></td> </tr> <tr> <td>(U) Required Navigation Performance (RNP) Improvements (FY03)</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) Army Communication Requirements (SECOMP-1) (FY03)</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) Aerial Delivery System Improvements (ADS) Phase II (FY03)</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> </tbody> </table> <p>* = completed event - contract obligation                      X = planned event - contract obligation</p>														<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Incremental Funding of Ongoing Performance Improvement Projects (FY01)	*												(U) Incremental Funding of Ongoing Performance Improvement Projects (FY02)						X							(U) Software Block 16 - 1st Year Award (FY02)									X				(U) Stabilizer Struts Phase 1 - 1st Year Award (FY02)									X				(U) Aircraft Wireless Intercom System (AWIS) (FY03)										X			(U) APU Independent Fuel and Fire Shutoff (AIFFS) (FY03)										X			(U) Crew Armor Protection Phase II (12.7 mm) (FY03)										X			(U) Required Navigation Performance (RNP) Improvements (FY03)												X	(U) Army Communication Requirements (SECOMP-1) (FY03)												X	(U) Aerial Delivery System Improvements (ADS) Phase II (FY03)												X
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Project 2569					Page 5 of 12 Pages					Exhibit R-2A (PE 0401130F)																																																																																																																																																														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0401130F C-17 Aircraft</b>			<b>2569</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Contractor Furnished Engineering & Test					112,127		99,513		147,002
(U)	Government Test & Other Government Costs (OGC)					11,000		10,000		10,211
(U)	Total					123,127		109,513		157,213
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing	C,FPI/FP	8/31/81	5,190,366	5,190,366	5,190,366				0	5,190,366
Boeing	C,CPPF	7/13/95	1,352,095	1,352,095	483,368	112,127	99,513	147,002	547,858	1,389,868
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	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				248,245	11,000	10,000	10,211	50,041	329,497
Wright Labs/Arnold Eng	PO				10,252				0	10,252
Dev Center										
Other	PO				3,030				0	3,030

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401130F C-17 Aircraft			PROJECT 2569		
<b>(U) Government Furnished Property:</b>									
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				5,790,471	112,127	99,513	147,002	547,858	6,696,971
Subtotal Support and Management				121,554	0	0	0	0	121,554
Subtotal Test and Evaluation				261,527	11,000	10,000	10,211	50,041	342,779
Total Project				6,173,552	123,127	109,513	157,213	597,899	7,161,304

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401130F C-17 Aircraft</b>	<b>PROJECT</b> <b>4886</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4886 Large Aircraft Infrared Counter Measures (LAIRCM)	44,883	0	0	0	0	0	0	0	44,883

(U) **A. Mission Description**

The Large Aircraft Infrared Countermeasures (LAIRCM) Program will provide advanced defensive capability for transport and tanker aircraft against Man-Portable Air Defense Systems (MANPADSs) (shoulder-launched IR missiles). The LAIRCM system is significantly more effective than flares, and requires no user intervention after it is activated. Installation of LAIRCM will increase the survivability of transport and tanker aircraft when operating in MANPADS threat areas.

The system consists of advanced integrated missile warning systems, processors, multi-band laser jammers and fine-track sensors. The lasers and fine-track sensors are mounted on turrets. Initial installation is planned on C-17s in late FY03/early FY04. Funding has been provided for 12 C-17s and 8 C-130s. RDT&E funds will be used for non-recurring engineering (NRE) and integration test and evaluation.

Funds for LAIRCM were originally put in the affected aircraft PEs (41130F for C-17s and 41115F for C-130s). Beginning in FY02, all LAIRCM funds were ZBT'd to a new LAIRCM PE (41134F), with the exception of the FY01 C-17 RDT&E funds shown here. The total funding did not change as a result of these ZBTs. The LAIRCM program completed all required New Start notifications in the FY01 PB.

The multi-command ORD supporting this program, 'LAIRCM ORD 314-92', was validated 3 Aug 98. Future efforts will improve producibility of the subsystems and improve upon the efficiency and effectiveness of the overall system.

HQ/AMC plans like to equip an additional 59 aircraft to meet the minimum 79 aircraft needed to support One Small-Scale Contingency (1SSC).

\* All FY 02 and later funds for LAIRCM were ZBT'd to PE 41134F and are not reflected in this R-2A.

(U) <b><u>FY 2001 (\$ in Thousands)</u></b>	
(U) \$41,683	1. NRE (initial design, drawings, specifications, documentation, develop C-17 peculiar support equipment for installation, assembly processes, and parts obsolescence)
	2. One kit buy
	Group A - one prototype kit
	Group B - one prototype kit
	3. Software development (for sensor and aircraft integration)
(U) \$3,200	Program Office Support (TDY, training, supplies, and CETA contract support)
(U) \$44,883	Total



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0401130F C-17 Aircraft</b>			<b>PROJECT</b> <b>4886</b>		
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>									
<b>(U) \$0</b> All funding ZBT'd to PE 41134F. See that PE for details.									
<b>(U) \$0</b> Total									
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>									
<b>(U) \$0</b> All funding ZBT'd to PE 41134F. See that PE for details.									
<b>(U) \$0</b> Total									
<b>(U) <u>B. Project Change Summary</u></b>									
LAIRCM funding for FY 02 and later has been ZBT'd to PE 41134F. See that PE for details.									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<b>(U) AF RDT&amp;E</b>									
<b>(U) PE 41134F, LAIRCM RDT&amp;E</b>		62,530	47,054	47,073				0	156,657
<b>(U) Other APPN</b>									
<b>(U) PE 41134F, C-17 LAIRCM Procurement, BP-1100</b>		13,370	31,640	31,221	64,312	190,152	173,963	0	504,658
<b>(U) PE 41134F, C-130 LAIRCM Procurement, BP 1100</b>			26,220	33,410	59,720	5,950		0	125,300
<b>(U) KC-135 Procurement</b>							56,000		56,000
* Note: FY 02 and later LAIRCM funds were ZBT'd from this PE to 41134F. See that PE for details.									
<b>(U) <u>D. Acquisition Strategy</u></b>									
LAIRCM system integration and acquisition will be overseen by the LAIRCM System Program Office (ASC/GRI). Northrop Grumman Corp will integrate the LAIRCM subsystems. Integration and installation of the LAIRCM system will be performed by Boeing for the C-17, since it's still in production and for the C-130.									
<b>(U) <u>E. Schedule Profile</u></b>									
	<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
Project 4886									

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

DATE  
**February 2002**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0401130F C-17 Aircraft**

PROJECT  
**4886**

(U) E. Schedule Profile Continued

	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
(U) Phase I - EMD	1	2	3	4	1	2	3	4	1	2	3	4
* - Denotes start				*								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0401130F C-17 Aircraft</b>			<b>4886</b>			
<b>(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Performance Development/System Engineering					41,683		0		0
(U)	Program Management					3,200		0		0
(U)	Total					44,883		0		0
Funding for FY 02 and later has been ZBT'd to PE 41134F. See that PE for details.										
<b>(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
<b>(U) <u>Performing Organizations:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Group B Integrator -Northrop	CPAF (EMD)	28 Sept 01				35,183				35,183
-Grumman Sys. Corp										
Group A Installation - Boeing	CPAF (EMD)	28 Sept 01				6,500				6,500
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.										
<u>Support and Management Organizations</u>										
SPO	N/A	N/A				3,200				3,200
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.										
<u>Test and Evaluation Organizations</u>										
Current C-17 Test team	N/A	N/A								
member organizations										
* Note: Funding for FY 02 and later can be found in PE 41134F. See that PE for details.										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0401130F C-17 Aircraft</b>			<b>4886</b>			
<b>(U) Government Furnished Property:</b>										
<u>Item</u>	<u>Contract</u>	<u>Method/Type</u>	<u>Award or</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>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>										
TBD										
<u>Support and Management Property</u>										
TBD										
<u>Test and Evaluation Property</u>										
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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						41,683				41,683
Subtotal Support and Management							3,200			3,200
Subtotal Test and Evaluation										
Total Project							44,883			44,883

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401132F C-130J PROGRAM</b>	<b>PROJECT</b> <b>5061</b>
--	--	-------------------------------

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5061 C-130J	0	0	10,000	13,800	6,000	2,500	6,100	0	38,400
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

This is an FY03 NEW START. Beginning in FY03, C-130J program RDT&E funding will provide for: 1) the development, integration, and testing of International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA)-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 (airlift) operations across a broad range of mission environments. As such, the aircraft must be capable of worldwide operations. The C-130J aircraft, in its present Block 5.3 configuration, is 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. During FY02, the C-130J will undergo flight testing to verify compliance with the Reduced Vertical Separation Minimum (RVSM) requirement. These RDT&E funds will enable development, integration, and testing of the remaining GATM/nav safety requirements needed on C-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 solution set will be common with other USAF/AMC weapon systems performing similar GATM/nav safety upgrades.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0401132F C-130J PROGRAM</b>	<b>PROJECT</b> <b>5061</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$10,000 Conduct non-recurring engineering design and software development for GATM/nav safety requirements and aircraft deficiencies/product improvements.</p> <p>(U) \$10,000 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>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 the C-130J aircraft fully compliant with known and emerging ICAO/FAA-mandated GATM/nav safety requirements and to correct weapon system deficiencies identified in initial flight testing.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></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: 15%; 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;">0</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</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: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,000</td> <td style="text-align: center;">38,400</td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,000</td> <td style="text-align: center;">38,400</td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	0	0	0	(U) Appropriated Value	0	0		0	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	0	0		0	b. Small Business Innovative Research	0	0		0	c. Omnibus or Other Above Threshold Reprogram	0	0		0	d. Below Threshold Reprogram	0	0		0	e. Rescissions	0	0		0	(U) Adjustments to Budget Years Since FY 2002 PBR	0	0	10,000	38,400	(U) Current Budget Submit/FY 2003 PBR	0	0	10,000	38,400
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	0	0	0	0																																																					
(U) Appropriated Value	0	0		0																																																					
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a. Congressional/General Reductions	0	0		0																																																					
b. Small Business Innovative Research	0	0		0																																																					
c. Omnibus or Other Above Threshold Reprogram	0	0		0																																																					
d. Below Threshold Reprogram	0	0		0																																																					
e. Rescissions	0	0		0																																																					
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(U) Current Budget Submit/FY 2003 PBR	0	0	10,000	38,400																																																					
Project 5061	Page 2 of 4 Pages	Exhibit R-2 (PE 0401132F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401132F C-130J PROGRAM</b>				PROJECT <b>5061</b>		
(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>										
(U) <u>Significant Program Changes:</u>										
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	0	0	10,000	13,800	6,000	2,500	6,100		38,400
(U)	Other APPN	0								
(U)	PE 0401132F, C-130J Procurement (BP1100)									
(U)	Mod MN-_1701				5,275	43,975	42,000	31,500		122,750
(U)	Mod MN-_6298						1,500	18,500		20,000
(U) <b><u>E. Acquisition Strategy</u></b>										
<p>The C-130J weapon system will be modified using a 'block upgrade' strategy. The full GATM/nav safety requirement will be met in two phases -- Block 6.0, which will begin with FY03 RDT&amp;E funding and continue with FY04 RDT&amp;E funding, and Block 6.1, which will use FY05 and FY06 RDT&amp;E funding to complete the total GATM/nav safety development effort. Block 6.2 will begin with FY07 RDT&amp;E funding and incorporate additional C-130J improvements not included in prior block upgrades.</p> <p>The proportion of GATM/nav safety requirements allocated to Blocks 6.0 and 6.1 will be determined via an on-going trade study being conducted by Lockheed Martin (the C-130J prime contractor). The results of this study will be available in May 2002. In addition to the GATM/nav safety requirements contained in Blocks 6.0 and 6.1, a to-be-determined number of aircraft deficiency reports (DRs) and product enhancements will be allocated to each block upgrade based on AMC's priorities for aircraft improvements.</p> <p>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/WC/EC-130J aircraft.</p>										
(U) <b><u>F. Schedule Profile</u></b>										
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4			1 2 3 4		1 2 3 4	
(U)	Block 6.0 CECP on contract								X	
	Project 5061									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>			<b>0401132F C-130J PROGRAM</b>				<b>5061</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Block 6.0 non-recurring engineering design/software development				0		0			10,000
(U)	Total				0		0			10,000
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Lockheed Martin Aeronautics, CPFF		1Q/FY03								
Marietta, GA										
<u>Product Development Organizations</u>										
Aeronautical Systems Center								10,000	28,400	38,400
(AFMC), WPAFB, OH										
<u>Support and Management Organizations</u>										
TBD										
<u>Test and Evaluation Organizations</u>										
Air Force Materiel Command										
(QT&E)										
Air Mobility Command (FDE)										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development								10,000	28,400	38,400
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project								10,000	28,400	38,400



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>				PROJECT <b>4942</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4942	Large Aircraft Infrared Counter Measures (LAIRCM)	0	61,905	47,539	46,790	75,013	53,441	0	0	286,887
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>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.</p> <p>In FY01, the LAIRCM program was initially funded in the C-17 program (PE 0401130F, RDT&amp;E). In FY02, LAIRCM efforts were transferred from the C-17 (PE 0401130F) and the C-130 (PE 0401115F) into a new PE which consolidates LAIRCM RDT&amp;E and Procurement funds into a single PE (0401134F). The LAIRCM program completed all of its required NEW START notifications in FY0. In FY 2001, the LAIRCM program was appropriated \$44,883 thousand into PE 0401130F, C-17 RDT&amp;E.</p> <p><b>(U) A. Mission Description</b></p> <p>The Large Aircraft Infrared Countermeasures System (LAIRCM) will provide a much more effective defensive capability for transport and tanker aircraft against the proliferating IR Man-Portable Air Defense Systems (MANPADS) threat. LAIRCM is significantly more effective than today's traditional employment of flares. It will require no operator intervention after the system is activated. LAIRCM will consist of an advanced integrated missile warning system or systems and an active laser countermeasures system. The multi-command Operational Requirements Document (ORD) -- LAIRCM ORD 314-92, was validated on 3 Aug 98.</p> <p>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 install LAIRCM on the twelve Phase I C-17s. The contract for installation of LAIRCM Phase I on the C-130 is scheduled to be awarded in the Spring of FY02. The KC-135 installation contract will be awarded in FY04.</p> <p>LAIRCM Phase I will be deployed on a small number of transport aircraft (12 C-17s and 8 C-130s). LAIRCM Phase II will develop follow-on hardware and modify an additional 59 aircraft, completing the 79 aircraft (43 C-17s, 24 C-130s &amp; 12 KC-135s) required to handle One Small Scale Contingency (1 SSC). In addition, it will bring all of LAIRCM's Phase I aircraft up to the Phase II hardware standard. FY01 was the first year of C-17 LAIRCM funding ; FY02 was the first year of C-130 funding; and KC-135 funding will start in FY04.</p>										
Project 4942			Page 1 of 6 Pages				Exhibit R-2 (PE 0401134F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>	<b>4942</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            Installation of this system will significantly increase the survivability of transport and tanker aircraft operating in areas with IR MANPADS threats. The first C-17 LAIRCM mod will be completed in early FY04. RDT&amp;E funds shown here, will be used for non-recurring engineering (NRE), systems integration, test and evaluation.</p>		
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>		
(U) \$0	Note: FY01 is LAIRCM's initial funding and these funds (\$44,883K) are in PE 41130F and include 1 RDT&E C-17 Kit buy.	
(U) \$0	Total	
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p>		
(U) \$26,804	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) \$29,326	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) \$5,775	Program office support (TDY, training, supplies, and A&AS contract support)	
(U) \$61,905	Total	
<p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p>		
(U) \$21,846	Continue design and development of the basic LAIRCM system.	
(U) \$20,691	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) \$5,002	Program office support (TDY, training, supplies, and A&AS contract support).	
(U) \$47,539	Total	
Project 4942	Page 2 of 6 Pages	Exhibit R-2 (PE 0401134F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																																																																																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>			PROJECT <b>4942</b>																																																																																																																				
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  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).</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td></td> <td style="text-align: right;">62,530</td> <td style="text-align: right;">47,654</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td style="text-align: right;">62,530</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: right;">-596</td> <td></td> <td></td> </tr> <tr> <td>    b. 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AF awarded the contract to integrate and install LAIRCM on the C-17 on 18 Jan 02.</p> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>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>Complete</u></th> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PE 41130F, C-17 RDT&amp;E</td> <td style="text-align: right;">44,883</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">0</td> <td style="text-align: right;">44,883</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> </tr> <tr> <td>(U) PE 41134F, C-17</td> <td style="text-align: right;">0</td> <td style="text-align: right;">13,370</td> <td style="text-align: right;">31,164</td> <td style="text-align: right;">30,654</td> <td style="text-align: right;">63,469</td> <td style="text-align: right;">185,836</td> <td style="text-align: right;">169,647</td> <td style="text-align: right;">31,140</td> <td style="text-align: right;">525,280</td> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget		62,530	47,654		(U) Appropriated Value		62,530			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-596			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 2002 PBR		-29	-115	286,887	(U) Current Budget Submit/FY 2003 PBR		61,905	47,539	286,887		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) PE 41130F, C-17 RDT&E	44,883							0	44,883	(U) Other APPN										(U) PE 41134F, C-17	0	13,370	31,164	30,654	63,469	185,836	169,647	31,140	525,280
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Project 4942			Page 3 of 6 Pages			Exhibit R-2 (PE 0401134F)																																																																																																																					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)				PROJECT 4942			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
Procurement (BP1100)											
(U) PE 41134F, C-130	0	0	25,817	32,791	58,409	5,829	68,271	41,830	232,947		
Procurement (BP1100)											
(U) PE 41134F, KC-135	0	0	0	0	0		54,612	1,388	56,000		
Procurement (BP1100)											
<b>(U) E. Acquisition Strategy</b>											
Integration of the LAIRCM subsystems will be accomplished by Northrop Grumman who was awarded the contract on 28 Sep 01. Boeing went on contract to install LAIRCM on the C-17s on 18 Jan 02 . The contract for installation of LAIRCM on the C-130 will be awarded in the Spring of FY02. The KC-135 installation will be determined in FY04.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Phase I SDD (Oct 02 - Jun 04)								X			
(U) C-17 Aircraft Integration (May 02 - Feb 04)							X				
(U) C-17 #1 modification and OT&E (May 03 - Feb 04)										X	
(U) C-130 Aircraft Integration (April 02 - Jan 04)							X				
(U) C-130 # 1 Modification and OT&E (Apr 02 - Feb 04)										X	
(U) Operational Assessment: (Jun - Jul 02)							*				
(U) C-17 LRIP decision (Aug 02)								X			
X Denotes Start											
* Denotes Stop											
Project 4942			Page 4 of 6 Pages				Exhibit R-2 (PE 0401134F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)</b>			<b>4942</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Continue LAIRCM install design & software development							26,804		21,846
(U)	Prototype kit buys (2) and installs (1C-17 and 1 C-130)							29,326		20,691
(U)	Program office support (A&AS contract support, TDY, etc.)							5,775		5,002
(U)	Total							61,905		47,539
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
Total System Cost	CPAF	28 Sep 01	N/A	N/A			50,630	39,652	152,443	242,725
<u>Product Development Organizations</u>										
System Program Office/Other							5,775	4,887	20,000	30,662
Govt Costs										
TBD										
<u>Support and Management Organizations</u>										
TBD										
<u>Test and Evaluation Organizations</u>										
TBD							5,500	3,000	5,000	13,500
<b>(U) Government Furnished Property:</b>										
<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
Project 4942										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002						
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT			
07 - Operational System Development			0401134F Large Aircraft InfraRed Counter Measures (LAIRCM)				4942			
<b>(U) Government Furnished Property Continued:</b>										
<u>Item</u>	<u>Contract</u>	<u>Method/Type</u>	<u>Award or</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>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
TBD										
<u>Support and Management Property</u>										
TBD										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
							50,630	39,652	152,443	242,725
Subtotal Product Development							5,775	4,887	20,000	30,662
Subtotal Support and Management										
Subtotal Test and Evaluation							5,500	3,000	5,000	13,500
Total Project							61,905	47,539	177,443	286,887

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401218F KC-135s					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	452	5,361	1,497	1,502	1,110	1,530	15,572	Continuing	TBD
4494 KC-135 Aging Aircraft Program	452	5,361	1,497	1,502	1,110	1,530	1,133	Continuing	TBD
4927 KC-X	0	0	0	0	0	0	14,439	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 674494: KC-135 Aging Aircraft Program: This program 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 addresses replacement for the KC-135 based on economic decision points and requirements.

674927: In FY07 RDT&E (\$14.4M) will be applied towards the replacement of the KC-135.

(U) **B. Budget Activity Justification**  
 Project 674494 is comprised of low technical risk efforts supporting a fielded weapon system and, therefore, is assigned to Budget Activity 7, Operational Systems. Project 674927, while associated with the KC-135 PE, will be assigned to Budget Activity 7, Operational Systems. However, when the KC-X PE is established, it will be assigned a BA that properly reflects the program content and risk.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>07 - Operational System Development</b>		<b>0401218F KC-135s</b>			
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	487	5,416	1,500	TBD
(U)	Appropriated Value	487	5,416		TBD
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-55		TBD
	b. Small Business Innovative Research	-31			TBD
	c. Omnibus or Other Above Threshold Reprogram				TBD
	d. Below Threshold Reprogram				TBD
	e. Rescissions	-4			TBD
(U)	Adjustments to Budget Years Since FY 2002 PBR			-3	TBD
(U)	Current Budget Submit/FY 2003 PBR	452	5,361	1,497	TBD
(U)	<u>Significant Program Changes:</u>				
	None				



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>								DATE <b>February 2002</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0401218F KC-135s</b>				<b>PROJECT</b> <b>4494</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4494 KC-135 Aging Aircraft Program	452	5,361	1,497	1,502	1,110	1,530	1,133	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>          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 addresses replacement for the KC-135 based on economic decision points and requirements.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>          (U) \$40 Functional Systems Integrity Program          (U) \$19 Basic materials test and predictive technique          (U) \$243 Mission support/contractor support          (U) \$150 Economic Service Life Study          (U) \$452 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>          (U) \$925 Corrosion/crack growth rate and fatigue determination and testing          (U) \$884 Functional Systems Integrity Program (FSIP)          (U) \$507 Mission support/contractor support          (U) \$3,045 Analysis of Alternatives          (U) \$5,361 Total</p>									
Project 4494			Page 3 of 7 Pages				Exhibit R-2A (PE 0401218F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401218F KC-135s</b>			PROJECT <b>4494</b>		
<b>(U) <u>A. Mission Description Continued</u></b>									
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>									
<b>(U) \$370 Corrosion/crack growth rate and fatigue determination and testing</b>									
<b>(U) \$200 Basic materials test and predictive technique</b>									
<b>(U) \$600 Functional Systems Integrity Program</b>									
<b>(U) \$327 Mission support/contractor support</b>									
<b>(U) \$1,497 Total</b>									
<b>(U) <u>B. Project Change Summary</u></b>									
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<b>(U) AF RDT&amp;E</b>									
<b>(U) Other APPN</b>									
<b>(U) <u>D. Acquisition Strategy</u></b>									
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.									
<b>(U) <u>E. Schedule Profile</u></b>									
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>
		1	2	3	4	1	2	3	4
<b>(U) Corrosion &amp; Fatigue Testing (ongoing )</b>									
<b>(U) Materials Test &amp; Predictive Tech (ongoing)</b>									
<b>(U) FSIP (ongoing- See Note 1)</b>									
<b>(U) Mission Support (ongoing)</b>									
<b>(U) Economic Service Life Study</b>									
<b>(U) Analysis of Alternatives</b>									
* X									
Project 4494			Page 4 of 7 Pages			Exhibit R-2A (PE 0401218F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>																								
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0401218F KC-135s</b>	PROJECT <b>4494</b>																								
<p>(U) <b><u>E. Schedule Profile Continued</u></b></p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4"><u>FY 2001</u></th> <th colspan="4"><u>FY 2002</u></th> <th colspan="4"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td align="center">1</td><td align="center">2</td><td align="center">3</td><td align="center">4</td> <td align="center">1</td><td align="center">2</td><td align="center">3</td><td align="center">4</td> <td align="center">1</td><td align="center">2</td><td align="center">3</td><td align="center">4</td> </tr> </tbody> </table> <p>X=Start / *=Complete            NOTE 1: Analysis of flight controls/autopilot will complete in 1st Qtr FY 03. FSIP will continue at that point with examination of additional aircraft systems as required.</p>			<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4
<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																		
1	2	3	4	1	2	3	4	1	2	3	4															
Project 4494	Page 5 of 7 Pages	Exhibit R-2A (PE 0401218F)																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0401218F KC-135s</b>				<b>4494</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Corrosion/crack growth determination and testing					0		925		370	
(U)	Basic materials test and predictive technique					19		0		200	
(U)	Functional Systems Integrity Program (FSIP)					40		884		600	
(U)	Mission support/contractor support					243		507		327	
(U)	Economic service life study					150		0			
(U)	Analysis of Alternatives					0		3,045			
(U)	Total					452		5,361		1,497	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Boeing	C/KC-135 Fleet Support SS/FFP	Oct 97- Mar 03	TBD	TBD	2,022	383	1,784	927	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	148	50	3,277	370	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	FAA, Wright Labs, NASA, etc.	Project Order/MPIR	Oct 97- Mar 03	TBD	TBD	100	19	300	200	Continuing	TBD
Project 4494				Page 6 of 7 Pages				Exhibit R-3 (PE 0401218F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0401218F KC-135s</b>			<b>4494</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		2,022	383	1,784	927	TBD
Subtotal Support and Management		148	50	3,277	370	TBD
Subtotal Test and Evaluation		100	19	300	200	TBD
Total Project		2,270	452	5,361	1,497	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401219F KC-10S</b>				PROJECT <b>4496</b>			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4496	KC-10 GATM	18,369	22,547	10,506	2,356	0	0	0	0	90,241	
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	1	
<p>(U) <b><u>A. Mission Description</u></b>            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. 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).</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$3,320 System Engineering/Program Management/FAA Certification            (U) \$7,469 Kit Design/Development            (U) \$4,839 Prototype Fabrication            (U) \$2,437 Award Fee            (U) \$304 Mission Support            (U) \$18,369 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$2,427 System Engineering/Program Management/FAA Certification            (U) \$12,381 Kit Design/Development            (U) \$3,255 Prototype Fabrication/Install            (U) \$3,334 Award Fee            (U) \$1,150 Mission Support            (U) \$22,547 Total</p>											
Project 4496				Page 1 of 5 Pages				Exhibit R-2 (PE 0401219F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0401219F KC-10S</b>	<b>4496</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$2,598	System Engineering/Program Management/FAA Certification			
(U) \$6,491	Kit Design/Development			
(U) \$520	Prototype Fabrication/Install			
(U) \$190	Award Fee			
(U) \$707	Mission Support			
(U) \$10,506	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
This effort is a low technical risk effort supporting a fielded weapon system and, therefore, is assigned to Budget Activity 7, Operational Systems Development.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	19,526	22,774	10,584	91,769
(U) Appropriated Value	19,526	22,774		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-227		
b. Small Business Innovative Research	-793			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-185			
e. Rescissions	-179			
(U) Adjustments to Budget Years Since FY 2002 PBR			-78	
(U) Current Budget Submit/FY 2003 PBR	18,369	22,547	10,506	90,241
<b>(U) <u>Significant Program Changes:</u></b>				



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0401219F KC-10S</b>				PROJECT <b>4496</b>	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN	20,523	12,476	8,156	14,080	46,059	42,788	13,097		157,179
PE#401219F / KC-10 Squadrons, Aircraft Procurement, AF, BA-5, KC-10 Mods, GATM, BP-11									
<b>(U) E. Acquisition Strategy</b>									
A sole source cost plus award fee contract was awarded to 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.									
<b>(U) F. Schedule Profile</b>									
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
		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							X		
(U) First Flight								X	
(U) Flight Certification Test								X	*
(U) AF OT&E Complete									X
(U) 1st Production Aircraft Delivery (1QFY04)									
(U) Low Rate Initial Production									X
X=Start / * = Complete									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0401219F KC-10S</b>			<b>4496</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System Engineering/Program Management					3,320		2,427		2,598	
(U)	Kit Design/Development					7,469		12,381		6,491	
(U)	Prototype Fabrication					4,839		0		0	
(U)	Prototype Fabrication/Install					0		3,255		520	
(U)	Award Fee					2,437		3,334		190	
(U)	Mission Support					304		1,150		707	
(U)	Total					18,369		22,547		10,506	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
	Boeing	SS/CPAF	Sep 99-Mar	87,055	90,665	35,068	18,065	21,397	9,799	2,369	
			04								
	<u>Product Development Organizations</u>										
	Program Management						48			48	
	(Government)										
	<u>Support and Management Organizations</u>										
	ARINC, Frontier, other	C/FP	Sep 99-Mar			323	210	335	338	1,206	
	support contractors		01								
	AF Mission Support System	T&M	Mar 00			1,000		600		1,600	
	(AFMSS)										
Project 4496				Page 4 of 5 Pages				Exhibit R-3 (PE 0401219F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0401219F KC-10S</b>				<b>4496</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Test and Evaluation Organizations</u>										
418 Test Squadrn	AFFTC	T&M	Jan 01	28	46	215	369	1	659	
(Edwards AFB)										
Joint Spectrum Center		T&M	Apr 00	97					97	
<b>(U) <u>Government Furnished Property:</u></b>										
		<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>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</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>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
					35,068	18,065	21,397	9,799	2,369	86,698
Subtotal Product Development						48				48
Subtotal Support and Management					1,323	210	935	338		2,806
Subtotal Test and Evaluation					125	46	215	369	1	756
Total Project					36,516	18,369	22,547	10,506	2,370	90,308

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0404011F Special Operations Forces</b>	<b>PROJECT</b> <b>4860</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4860 Special Operations Forces	2,776	0	0	0	0	0	0	0	2,776
Quantity of RDT&E Articles	2	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

Aircrew require an enhanced capability to precisely locate and identify the modern day threats in order to meet mission requirements. Improved threat information from a modernized radar warning receiver (RWR) will assist the aircrews in determining precise threat ranges/directions and provide option responses short of mission abort or violent aircraft maneuvering. Threat location refinements will help an enroute aircrew respond 'real time' to previously unknown threats by providing sufficiently accurate information to allow the aircrews to reroute around hostile areas. This precision location and identification (PLAID) upgrade has been targeted for the AN/ALR-69 RWR system installed on all Air Force Special Operations Command (AFSOC) aircraft. This upgrade effort will be designed/developed to provide improved situational awareness capability, improved reliability/maintainability, improved emitter ranging capability by a factor of 100, improved angle accuracy, and increased ambiguity resolution by an order of magnitude. The present AN/ALR-69 RWR system is 1970's technology and has become increasingly difficult to maintain with the sustainment and capability issues.

Congressional plus-up in FY-01 to this program element for three AFSOC projects: \$900K for Universal Biological Sensor, \$500K for AFSOC aircrew orientation and screening, and \$350K for developing a methodology for approving medications for aircrews. AFSOC has a requirement for a man-portable capability to provide early warning and force protection from nuclear, biological and chemical contaminants. The object of the universal sensor project is to develop passive inexpensive sensors for agents which can be read remotely or with a hand-held reader on a variety of surfaces without damaging the surfaces or otherwise revealing the sensor's presence. The existing AFSOC aircrew orientation and screening program needs to be analyzed and improved in order to produce a better applicant selection rate, decrease training washout rates, and increase the number of qualified special operations personnel with a limited training budget. In order to retain as many highly trained special operations aviators as possible, AFSOC needs a methodology for evaluating and/or approving the use of new medications for use by aircrew, thus allowing them to keep flying while being treated for waiverable medical conditions.

(U) **FY 2001 (\$ in Thousands)**

(U) \$1,073 Design/development of hardware/software for precision location and identification (PLAID) upgrade to AN/ALR-69 RWR

(U) \$873 Develop/test prototype sensor for detecting/identifying biological warfare agents

(U) \$487 Analyse and improve methodology for orientation/screening of AFSOC aircrew applicants

(U) \$343 Develop methodology for approving new medications for individual aircrew members

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																													
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0404011F Special Operations Forces</b>	<b>PROJECT</b> <b>4860</b>																																													
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <p>(U) \$2,776                      Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0                              No Activity</p> <p>(U) \$0                              Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0                              No Activity</p> <p>(U) \$0                              No Activity</p> <p>(U) \$0                              Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system. The AN/ALR-69 PLAID effort is to develop a precision location and threat identification upgrade for the ALR-69. The universal biological sensor project is developing and testing a prototype aerosol spray sensor and a handheld reader to detect and identify biological agents for AFSOC. The current AFSOC aircrew orientation &amp; screening program is being analysed and redesigned to improve applicant selection. A methodology is being developed and validated for individually evaluating aviators on pharmacotherapy.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1,109</td> <td></td> <td></td> <td style="text-align: center;">2,776</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">2,833</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 style="text-align: center;">-57</td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,109			2,776	(U) Appropriated Value	2,833				(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		-57		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																											
(U) Previous President's Budget	1,109			2,776																																											
(U) Appropriated Value	2,833																																														
(U) Adjustments to Appropriated Value																																															
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e. Rescissions		-57																																													
Project 4860	Page 2 of 5 Pages	Exhibit R-2 (PE 0404011F)																																													

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0404011F Special Operations Forces</b>				<b>4860</b>			
<b>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></b>											
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Total Cost</u>	
(U) Adjustments to Budget Years Since FY 2002 PBR											
(U) Current Budget Submit/FY 2003 PBR											
				2,776						2,776	
(U) <u>Significant Program Changes:</u>											
In FY01, Congress added \$1.75M for three AFSOC projects.											
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>											
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) PE64270F EW Development											
		13,376	1,827	10,574							
(U) Other Procurement (3010)											
				92	10,358	11,002	11,587	11,934	Continuing		TBD
PE27442F, Common ECM Equipment											
(U) Other APPN											
<b>(U) <u>E. Acquisition Strategy</u></b>											
Contract for PLAID EMD was awarded Aug 01 using full and open competitive procedures for source selection.											
The three Congressional add development projects will be handled by Air Force Research Lab, Brooks AFB, TX.											
<b>(U) <u>F. Schedule Profile</u></b>											
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>			
				1	2	3	4	1	2	3	4
(U) Contract award											
(U) Design review											
(U) Integrated Defensive Avionics Lab											
(U) C-130 Development/Operational Test Start											
* - Denotes completed event, X - Denotes a planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0404011F Special Operations Forces</b>				<b>4860</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Software/Hardware Design/Development					1,880		0		0
(U)	Program Office Support					440		0		0
(U)	System Engineering Support					456		0		0
(U)	Test							0		0
(U)	Total					2,776		0		0
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ALR-69 Prime (Raytheon)	CPAF	Aug 01	TBD	TBD						
AFRL/Human Effec Direc	NA	TBD	TBD	TBD	0	1,389			0	1,389
<u>Support and Management Organizations</u>										
WR-ALC/LNRC	NA	Jun 01	TBD	TBD	0	920			0	920
Illinois Inst of Tech	MIPR	Sep 01	330	330					0	0
WR-ALC/LU	In-house	TBD	370	370					0	0
AFSOC/XPQ	NA	TBD	TBD	TBD		205			0	205
<u>Test and Evaluation Organizations</u>										
ALR-69 PLAID RTO/PTO	MIPR	TBD	1,245	1,245	0	166			0	166
AF Research Lab	MIPR		750	750					0	0
3 Congressional adds	NA	TBD	TBD	TBD		96			0	96



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0404011F Special Operations Forces					
				4860					
<b>(U) Government Furnished Property:</b>									
<u>Item</u>	<u>Contract</u>	<u>Award or</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>or Funding</u>	<u>Delivery</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>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									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				0	1,389			0	1,389
Subtotal Support and Management				0	1,125			0	1,125
Subtotal Test and Evaluation				0	262			0	262
Total Project				0	2,776			0	2,776

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0605024F Anti-Tamper Technology Executive Agent</b>	<b>PROJECT</b> <b>5066</b>
--	--	-------------------------------

	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5066      Anti-Tamper Technology Executive Agent	0	0	8,000	8,000	8,000	8,000	8,000	Continuing	TBD
Quantity of RDT&E Articles	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, and provide a security classification guide.

The Anti-Tamper Hardware Technology Development will occur in five areas: advanced sensor hardware, generic electronic hardware, signature control, access detection & denial, and software 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. 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 2001 (\$ in Thousands)**  
 (U) \$0                      No Activity  
 (U) \$0                      Total

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

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																																																																															
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0605024F Anti-Tamper Technology Executive Agent</b>		PROJECT <b>5066</b>																																																																																																
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$6,240                      Anti-Tamper Hardware Technology Development</p> <p>(U) \$590                              Technical Support</p> <p>(U) \$1,170                      Program Management Activity (PMA)</p> <p>(U) \$8,000                      Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Authority (BA) 7 Operational System Development because Anti-Tamper technologies have applicablity to operational systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td></td> <td></td> <td></td> <td></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 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">8,000</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">8,000</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <td></td> <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>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</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> </tr> </tbody> </table>									<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget					(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 2002 PBR			8,000		(U) Current Budget Submit/FY 2003 PBR			8,000	TBD		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN									
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Project 5066		Page 2 of 4 Pages			Exhibit R-2 (PE 0605024F)																																																																																																	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0605024F Anti-Tamper Technology Executive Agent</b>				PROJECT <b>5066</b>																																						
<p>(U) <b><u>E. Acquisition Strategy</u></b>          Program Research and Development Announcements (PRDAs) will be used for the Anti-Tamper hardware technology development. A sole source contract will be used for some of the technical support.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width: 40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="2" style="text-align: center;"><u>FY 2003</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) Anti-Tamper Hardware Technology Development PRDAs on contract</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 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			1	2	3	4	1	2	3	4	1	2	3	4	(U) Anti-Tamper Hardware Technology Development PRDAs on contract										X		
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																					
	1	2	3	4	1	2	3	4	1	2	3	4																																		
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Project 5066			Page 3 of 4 Pages				Exhibit R-2 (PE 0605024F)																																							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0605024F Anti-Tamper Technology Executive Agent</b>				<b>5066</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	AT Hardware	Technology Development								6,240
(U)	Technical Support									590
(U)	PMA									1,170
(U)	Total									8,000
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
AFRL/XPJ	PRDA	TBD	6,240	6,240				6,240	Continuing	TBD
Sandia National Lab	Sole Source	Various	590	590				590	Continuing	TBD
<u>Support and Management Organizations</u>										
AFRL/XPJ -PMA	Various	TBD	1,170	1,170				1,170	Continuing	TBD
<u>Test and Evaluation Organizations</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development							6,830	TBD	TBD
	Subtotal Support and Management							1,170	TBD	TBD
	Subtotal Test and Evaluation									
	Total Project							8,000	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0702207F Depot Maintenance (Non-IF)</b>				PROJECT <b>3326</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3326	Precision Measurement & Calibration	3,336	2,719	1,340	1,433	1,457	1,439	1,464	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>            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&amp;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&amp;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) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$1,400 Complete the avalanche photodiode improvement and tunable laser projects; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.</p> <p>(U) \$900 Continue development of standards for radar support, RF communications systems, and radar cross-section range measurements.</p> <p>(U) \$250 Complete development of improved calibration support for coordinate measuring machines (CMMs), and continue development of standards to support physical, mechanical and electro-mechanical support equipment.</p> <p>(U) \$486 Complete the frequency response characteristics of capacitors and the next generation sampling comparator probe projects; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.</p> <p>(U) \$150 Complete the large area beta source project and continue the development of national standards for calibration of ionizing radiation hazard</p>										
Project 3326			Page 1 of 6 Pages				Exhibit R-2 (PE 0702207F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0702207F Depot Maintenance (Non-IF)</b>	<b>3326</b>
(U) <u><b>A. Mission Description Continued</b></u>		
(U) <u><b>FY 2001 (\$ in Thousands) Continued</b></u>		
	instrumentation.	
(U) \$150	Begin development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$3,336	Total	
(U) <u><b>FY 2002 (\$ in Thousands)</b></u>		
(U) \$1,100	Complete the target simulator radiometer; and continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.	
(U) \$800	Complete the full scale co-conical chamber; and continue development of standards for radar support, RF communications systems, and radar cross-section range measurements.	
(U) \$160	Complete the low gas flow MAP; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.	
(U) \$500	Complete the Hall effect resistance standard project, and the improved thin film multi junction thermoconverter project; and continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
(U) \$59	Complete the low level dosimetry traceability project and continue the development of national standards for calibration of ionizing radiation hazard instrumentation.	
(U) \$100	Continue development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$2,719	Total	
(U) <u><b>FY 2003 (\$ in Thousands)</b></u>		
(U) \$560	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) \$350	Continue development of standards for radar support, RF communication systems, and radar cross-section range measurements.	
(U) \$130	Complete the windtunnel modification and characterization project; and continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment.	
(U) \$200	Continue development of standards for electrical measurements to support high accuracy electronic test equipment.	
(U) \$40	Continue the development of national standards for calibration of ionizing radiation hazard instrumentation.	
(U) \$60	Complete development of improved standards and procedures to support hydrazine detector calibrations.	
(U) \$1,340	Total	
Project 3326	Page 2 of 6 Pages	Exhibit R-2 (PE 0702207F)



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																																																																																								
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<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is in budget activity 7 - Operational System Development because it supports operational systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">1,515</td> <td style="text-align: right;">1,533</td> <td style="text-align: right;">1,569</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">3,515</td> <td style="text-align: right;">1,542</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. 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Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: right;"><u>FY 2001</u></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>Cost to</u></th> <th style="text-align: right;"><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>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</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> </tr> </tbody> </table> <p>(U) <b><u>E. Acquisition Strategy</u></b>                  Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td>Project 3326</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,515	1,533	1,569	TBD	(U) Appropriated Value	3,515	1,542			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		1,200			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 2002 PBR	-179	-23	-229		(U) Current Budget Submit/FY 2003 PBR	3,336	2,719	1,340	TBD		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	Project 3326			
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Page 3 of 6 Pages			Exhibit R-2 (PE 0702207F)																																																																																																												

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0702207F Depot Maintenance (Non-IF)</b>	<b>PROJECT</b> <b>3326</b>
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(U) F. Schedule Profile Continued

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) N/A												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0702207F Depot Maintenance (Non-IF)			PROJECT 3326			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Quality Assurance (Develop Measurement Standards & Calibration Support)					3,316		2,699		1,315	
(U)	Travel					20		20		25	
(U)	Total					3,336		2,719		1,340	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	National Institute of Standards & Technology	MIPR (DD FORM 448)	Varies	TBD	TBD	14,980	3,146	2,589	1,225	Continuing	TBD
	Department of Energy	MIPR (DD FORM 448)	Varies	TBD	TBD	59	170	110	90	Continuing	TBD
	Technical Support Contracts AFMC	Various In House	Varies	TBD	TBD	173	20	20	25	Continuing	TBD
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
(U) <b><u>Government Furnished Property:</u></b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>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 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0702207F Depot Maintenance (Non-IF)</b>			<b>3326</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		15,212	3,336	2,719	1,340	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		15,212	3,336	2,719	1,340	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708011F Industrial Preparedness				PROJECT 2865			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
2865	Manufacturing Technology	55,464	58,406	37,581	40,319	41,023	40,627	41,361	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) <b><u>A. Mission Description</u></b>            DoD Manufacturing Technology (ManTech) program is mandated by Section 2521, Title 10, United States Code. The ManTech program identifies and resolves critical advanced manufacturing capability issues in response to warfighter needs. ManTech also develops, demonstrates, and transitions advanced manufacturing techniques to reduce costs, improve quality/capability, and shorten cycle times of weapon systems during design, development, production, and sustainment. ManTech projects respond specifically to System 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 also goes beyond just factory floor manufacturing/repair processes. It encompasses every activity within an industrial enterprise, ranging from business management (e.g., tools for Integrated Product Process Development) to supplier base interactions and performance. The strategies and best practices of world-class enterprises are analyzed and the performance of defense suppliers benchmarked. The world's best industrial practices are adapted and validated in multiple pilot projects and then deployed in defense applications. The ManTech program efforts also enhance repair/remanufacture capabilities to affordably sustain the aging weapon systems inventory, thereby reducing total ownership costs. In order to respond rapidly to warfighter needs, ManTech objectives are conducted through partnership with all industry levels, from large prime contractors to small material and parts vendors, as well as Air Logistics Centers. Program emphasis is on the aeronautical, sustainment, armament/directed energy, and space/launch vehicle sectors of the industrial base. Note: In FY 2002, Congress added \$5.2 million to this program for Advanced Low-Observable Coatings (\$4.2 million) and Laser Peening for F-119 Engine (\$1.0 million).</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$21,430      Continued to invest in cost-effective and efficient manufacturing technology demonstrations for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for future and legacy aircraft. Maintained pilot efforts in high leverage activities to validate potential benefits accrued from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Performed long-term projects to develop lean enterprise integration tools. Initiated an effort to catalog and implement lean concepts.</p> <p>(U) \$19,238      Enhanced current weapon system mission readiness by establishing/demonstrating cost-effective repair and remanufacturing technologies for affordable sustainment. Reduced repair and maintenance cycle time for aging systems. Developed remanufacturing capabilities to rapidly</p>											
Project 2865				Page 1 of 9 Pages				Exhibit R-2 (PE 0708011F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708011F Industrial Preparedness</b>	<b>2865</b>
(U) <u><b>A. Mission Description Continued</b></u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$2,654	generate standardized replacement parts on demand. Initiated an effort to address technologies for turbine engine life extension. Furthered the manufacturing state-of-the-art for advanced tactical missiles. Established and demonstrated efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods. Identified and implemented manufacturing improvements required to transition precision-guided munition subsystems into production. Conducted high-payoff pilot projects to validate potential benefits accrued from using production best practices. Initiated a program to establish affordable manufacturing processes for Micro-Electro-Mechanical Systems applied to inertial measurement units.	
(U) \$6,342	Established and demonstrated affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and launch vehicles. Provided effective and efficient manufacturing technology for critical high quality, reliable electronic components/assemblies for surveillance, tracking communications links, and data/signal processing. Conducted pilot efforts in high-payoff endeavors for efficient, low-cost capability to produce components and weapon systems in the spacecraft, launch vehicles, and command, control, communications, and intelligence industrial base sectors. Maintained efforts to rapidly respond to space sector manufacturing issues.	
(U) \$3,800	Started tasks associated with affordable processing of Specialty Aerospace Metals (e.g., laser forming, casting, welding, forging).	
(U) \$2,000	Started scale-up of semi-automatic production process for Nickel Metal-Hydride Replacement Battery effort.	
(U) \$55,464	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$25,809	Launch 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). Conduct high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Leverage specialty aerospace metals work into metals affordability initiatives focused on laser forming, casting, welding, and forging. Focus long-term projects using lean enterprise integration tools. Deliver final version of the Lean Enterprise Self-Assessment Tool and Transition to Lean Roadmaps to aerospace industry. Complete Lean Education curriculum for Defense Acquisition University. Continue rapid response productivity improvement efforts with selected high value programs. Continue activities aimed at manufacture of more affordable low observable coatings. Establish processing parameters for optimized manufacture of high strength, low weight fiber composites for transition to C-17. Plan effort to reduce high-cycle fatigue damping in engine components. Complete investigations for manufacturing modeling and simulation activity to reduce the number of engineering change orders generated in manufacturing enterprises (Integrated Manufacturing Simulation for Affordability).	
Project 2865	Page 2 of 9 Pages	Exhibit R-2 (PE 0708011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0708011F Industrial Preparedness</b>	<b>2865</b>
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$13,930	Provide cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems to enhance mission readiness. Complete reconfigurable tool for rapid, accurate sheet metal stretch forming. Complete transition of lean concepts applied to maintenance, repair, and overhaul activities at organic and contractor depots. Reduce repair and maintenance cycle time for aging systems and established remanufacturing capabilities which rapidly generate standardized replacement parts on demand. Continue pilot efforts to assess benefits derived from inserting electronic parts obsolescence management tools into weapon system production programs. Initiate technical effort to extend the life of critical, high-value rotating engine components exposed to high cycle fatigue environments. Continue 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 implement sustainment improvements for Air Logistic Center engine refurbishment shops.	
(U) \$7,687	Pursue efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Establish 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. Continue 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) \$5,830	Provide affordable, flexible manufacturing process development to reduce cost and lead-time for higher performance spacecraft and launch vehicles. Establish effective and efficient manufacturing technology for critical high quality, reliable electronic components and assemblies required for surveillance, tracking communications links, and data/signal processing. Conduct 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. Continue 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). Continue rapid response productivity improvement effort to improve affordability of space based radar/electronic components.	
(U) \$4,159	Develop tasks associated with Congressional Add for Advanced Low-Observable Coatings (e.g., increase sputtering rate during coating application).	
(U) \$991	Develop tasks associated with Congressional Add for Laser Peening for F-119 Engine (e.g., increase damage tolerance of integrally bladed rotors).	
(U) \$58,406	Total	
Project 2865		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0708011F Industrial Preparedness</b>	<b>2865</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$19,998      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). Leverage specialty aerospace metals work into 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 (e.g., unmanned air vehicles).</p> <p>(U) \$12,457      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). Complete a rapid response productivity improvement effort to overcome structural damage of hot trailing edges found in the wake of hot engine exhaust.</p> <p>(U) \$4,026      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.</p> <p>(U) \$1,100      Develop risk reduction efforts addressing critical manufacturing issues for various space systems (e.g., Space Based Radar). Focus efforts on components such as electronically scanned arrays, optics, and thermal management sub-systems to improve productivity, reliability, and affordability.</p> <p>(U) \$37,581      Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>  ManTech is part of Budget Activity 7, Operational System Development, to provide 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.</p>		
Project 2865	Page 4 of 9 Pages	Exhibit R-2 (PE 0708011F)



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0708011F Industrial Preparedness</b>			<b>2865</b>		
<b>(U) C. Program Change Summary (\$ in Thousands)</b>									
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>	
(U)	Previous President's Budget			58,342	53,782	54,415			
(U)	Appropriated Value			58,882	58,982				
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions				-576				
	b. Small Business Innovative Research			-1,436					
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram			-1,442					
	e. Rescissions			-540					
(U)	Adjustments to Budget Years Since FY 2002 PBR					-16,834			
(U)	Current Budget Submit/FY 2003 PBR			55,464	58,406	37,581		TBD	
(U)	<u>Significant Program Changes:</u>								
	Program funding was reduced due to higher priority Air Force requirements.								
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U)	AF RDT&E								
(U)	Other APPN								
	Not Applicable.								
<b>(U) E. Acquisition Strategy</b>									
	All major contracts in this Program Element were awarded after full and open competition.								
<b>(U) F. Schedule Profile</b>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708011F Industrial Preparedness					PROJECT 2865			
<b>(U) <u>F. Schedule Profile Continued</u></b>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) Manufacturing technology for aeronautical systems													
(U) Request for Proposal Release		*				X			X				
(U) Contract Awards				*			X			X			
(U) Repair/remanufacture technologies for weapons systems													
(U) Request for Proposal Release		*	*		*				X				
(U) Contract Awards				*		X				X			
(U) Manufacturing technologies for missiles, munitions, directed energy													
(U) Request for Proposal Release				*	*				X				
(U) Contract Awards						*	X			X			
(U) Manufacturing technologies for space and launch systems													
(U) Request for Proposal Release					*				X				
(U) Contract Awards						X				X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0708011F Industrial Preparedness</b>				<b>2865</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Manufacturing technologies for aeronautical systems					21,430		25,809		19,998
(U)	Repair/remanufacture technologies for weapon system sustainment					19,238		13,930		12,457
(U)	Manufacturing technologies for missiles, munitions, and directed energy weapons					2,654		7,687		4,026
(U)	Manufacturing technologies for space and launch systems					6,342		5,830		1,100
(U)	Nickel Metal-Hydride Replacement Battery effort					2,000		0		
(U)	Specialty Aerospace Metals					3,800		0		
(U)	Advanced Low Observable Coatings							4,159		
(U)	Laser Peening for F-119 Engine							991		
(U)	Total					55,464		58,406		37,581
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Various	Various	Various	N/A	N/A	19,068	19,575	22,030	14,581	Continuing	TBD
Howmet	Cost Share	Jul 95	N/A	N/A	12,935	3,500	0	0	0	16,435
Composites Affordability Initiative (Consortium)	Various	Various	N/A	N/A	13,055	5,150	5,000	5,000	3,500	31,705
Sustainment Initiative	Various	Various	N/A	N/A	2,430	4,822	4,475	0	3,100	14,827
Engine Forging Initiative	Various	May 99	N/A	N/A	1,200	3,000	2,000	0	0	6,200
Parts Obsolescence Initiative	Various	Various	N/A	N/A	3,120	5,449	3,761	4,000	245	16,575
Small/Medium Supplier Initiative	Various	Various	N/A	N/A	300	2,650	3,325	0	0	6,275
ManTech for Affordable	Various	Various	N/A	N/A	1,875	3,475	3,665	0	2,500	11,515
Project 2865				Page 7 of 9 Pages				Exhibit R-3 (PE 0708011F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
07 - Operational System Development										2865
PE NUMBER AND TITLE										
0708011F Industrial Preparedness										
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
Spacecraft										
Laser Shock Peening, Inc.	CS	Aug 98	N/A	N/A	1,700	1,343	0	0	0	3,043
Coherent Technology, Inc.	CS	Jun 97	N/A	N/A	2,100	0	0	0	0	2,100
Turbine Engine Life	TBD	TBD	N/A	N/A	0	200	2,500	5,000	7,300	15,000
Extension										
Affordable Missile Warning	TBD	TBD	N/A	N/A	0	200	2,500	2,500	0	5,200
Sensor										
Integrated Manufacturing and	TBD	TBD	N/A	N/A	0	300	2,000	0	15,200	17,500
Simulation for Affordability										
Electro Energy, Inc.	Various	Various	N/A	N/A	0	2,000	0	0	0	2,000
Specialty Aerospace Metals	Various	Various	N/A	N/A	0	3,800	0	0	Continuing	TBD
Metals Affordability Initiative	Various	Various	N/A	N/A	2,000	0	2,000	3,000	Continuing	TBD
Low Observable Structures	TBD	TBD	N/A	N/A	0	0	0	1,500	Continuing	TBD
Affordable Missile Guidance	TBD	TBD	N/A	N/A	0	0	0	1,500	Continuing	TBD
High Cycle Fatigue	TBD	TBD	N/A	N/A	0	0	0	500	Continuing	TBD
Advanced Low Observable	TBD	TBD	N/A	N/A	0	0	991	0	0	991
Coatings										
Laser Peening for F-119	TBD	TBD	N/A	N/A	0	0	4,159	0	0	4,159
Engine										
<u>Support and Management Organizations</u>										
In house support										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0708011F Industrial Preparedness</b>			<b>2865</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		59,783	55,464	58,406	37,581	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		59,783	55,464	58,406	37,581	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708012F Logistic Support Activities</b>				PROJECT <b>5054</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5054 CAM Modernization	0	0	10,375	0	0	0	0	0	10,375
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY2003, 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 2001 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

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

(U) **FY 2003 (\$ in Thousands)**  
 (U) \$5,376 CAMS Modernization  
 (U) \$1,664 Support Contractors (Tecolote, SenCom)  
 (U) \$3,335 System Program Office (SPO) Operations  
 (U) \$10,375 Total

Project 5054 Page 1 of 5 Pages Exhibit R-2 (PE 0708012F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>																																																																																																										
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708012F Logistic Support Activities</b>			PROJECT <b>5054</b>																																																																																																										
<p>(U) <b><u>B. Budget Activity Justification</u></b>                  This program is a Budget Activity 7, Operational Systems Development, because projects are being engineered to support already operational weapon systems.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2001</u></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: right;"><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></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</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 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">10,375</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10,375</td> <td style="text-align: right;">10,375</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b>                  In FY2003, \$10.4M RDT&amp;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 FY2004, but modernization efforts such as the consolidation of 106 databases to a single maintenance central database 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> <p>(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: center;"><u>FY 2001</u></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>Cost to</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> <tr> <td></td> <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>Complete</u></th> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</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> </tr> <tr> <td>    N/A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>E. Acquisition Strategy</u></b>                  All major contracts awarded after full and open competition.</p>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	0	0		(U) Appropriated Value	0	0			(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 2002 PBR			10,375		(U) Current Budget Submit/FY 2003 PBR	0	0	10,375	10,375		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN										N/A									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																																																																													
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Project 5054			Page 2 of 5 Pages			Exhibit R-2 (PE 0708012F)																																																																																																											



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
<b>07 - Operational System Development</b>				<b>0708012F Logistic Support Activities</b>				<b>5054</b>				
<b>(U) <u>F. Schedule Profile</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Central Maintenance Database (GCSS-AF)								X			
(U)	Deployable CAMS								X			
(U)	Air Force Portal									X		
	X denotes planned event											
Project 5054				Page 3 of 5 Pages				Exhibit R-2 (PE 0708012F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708012F Logistic Support Activities				PROJECT 5054			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	CAMS Modernization					0		0		5,376	
(U)	Support Contractors (Tecolote, SenCom)					0		0		1,664	
(U)	SPO Operations					0		0		3,335	
(U)	Total					0		0		10,375	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
CAMS Modernization											
	Software Factory	SLA	N/A	N/A	N/A	0	0	0	5,376	0	5,376
<u>Support and Management Organizations</u>											
	Support Contractors	Var	Var	N/A	N/A	0	0	0	1,664	0	1,664
	SPO Operations	N/A	N/A	N/A	N/A	0	0	0	3,335	0	3,335
<u>Test and Evaluation Organizations</u>											
N/A											
(U) <b><u>Government Furnished Property:</u></b>											
	<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
N/A											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	
BUDGET ACTIVITY		PROJECT	
<b>07 - Operational System Development</b>	<b>0708012F Logistic Support Activities</b>	<b>February 2002</b>	
<p>(U) <u>Government Furnished Property Continued:</u></p> <p><u>Support and Management Property</u> N/A</p> <p><u>Test and Evaluation Property</u> N/A</p>			
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
		<u>Budget</u>	<u>Budget</u>
		<u>FY 2003</u>	<u>Budget to</u>
			<u>Complete</u>
			<u>Total</u>
<u>Subtotals</u>			
Subtotal Product Development	0	0	0
Subtotal Support and Management	0	0	0
Subtotal Test and Evaluation			
Total Project	0	0	0
		5,376	5,376
		4,999	4,999
		10,375	10,375

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program				PROJECT 2146		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2146	PRAM	20,304	26,623	4,767	7,409	10,224	10,567	11,224	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>(U) <b>A. Mission Description</b>            This program emphasizes the rapid incorporation of reliability and maintainability (R&amp;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. It 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 FY2002 Congress added \$6.2M to this program for Automated Nondestructive Inspection for Turbine Engines (\$4.0M) and Inspection Technology for Turbine Engines (\$2.2M).</p>										
<p>(U) <b>FY 2001 (\$ in Thousands)</b></p>										
(U)	\$5,320	Reduced the overall maintenance burden, improved capabilities and reliability, and improved mission readiness of aircraft subsystems. Reduced cost by enhancing engine trending and diagnostic systems. While current systems sound an alarm when a threshold is breached, adverse trends are not diagnosed. Applying artificial intelligence, statistical analysis, and reasoning tools will enable appropriate corrective action to be taken when an adverse trend is detected and diagnosed. Continued the ongoing project to lower engine support costs by developing new engine oil analysis techniques that will identify all wear modes during the life of an engine.								
(U)	\$2,000	Addressed the R&M issues that drive airframe operations and support costs. Developed protective coatings and application techniques to eliminate ice accumulation on the B-1B inlet, eliminated this flight safety risk, and reduced maintenance costs.								
(U)	\$3,600	Reduced maintenance costs and increased weapon systems availability by aggressively addressing shortfalls in support equipment and base infrastructure. Overcame parts obsolescence with current electronic warfare equipment test consoles by developing a single configuration test station to service both the ALQ-131 and ALQ-184 electronic attack pods used on the F-16, F-15, A-10, and C-130. Addressed the number one reliability driver for the Low Altitude Navigation and Targeting Infrared for Night pod by developing a test capability that will detect marginal								
Project 2146		Page 1 of 6 Pages				Exhibit R-2 (PE 0708026F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>	<b>2146</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2001 (\$ in Thousands) Continued</u></b>		
	performance and predict repairability of the Traveling Wave Tube before it is sent to the repair vendor.	
<b>(U) \$2,855</b>	Continued reliabilirt and maintainability (R&M) efforts that directly support military space and missile systems, including leveraging commercial-off-the-shelf technology to replace the Constellation Control System and reduce Military Satellite Communications (MILSATCOM) operations and support (O&S) costs. Initiated a program to procure prototypes and perform qualification testing for the Peacekeeper electronics battery.	
<b>(U) \$529</b>	Initiated high priority, quick response R&M projects identified by the operational commands to reduce maintenance downtime. These quick response issues were identified throughout the year. The Productivity, Reliability, Availability, and Maintainability (PRAM) effort is typically completed in a month or less.	
<b>(U) \$6,000</b>	Developed and implemented a lean manufacturing approach for propulsion repair at Oklahoma City Air Logistics Center. Developed a real-time management information system to support the change over from functional shops to business units and product lines.	
<b>(U) \$20,304</b>	Total	
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>		
<b>(U) \$2,325</b>	Complete 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; developing life support equipment and more efficient means of publishing technical data.	
<b>(U) \$12,084</b>	Continue airframe, subsystem, and space reliability and maintainability (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 O&S costs.	
<b>(U) \$4,162</b>	Continue existing aging aircraft efforts that will reduce overall Air Force O&S cost and increase aircraft availability, reliability, while maintaining operational capability and reduce mobility footprint.	
<b>(U) \$1,913</b>	Continue the existing efforts to address reduced O&S costs within the air armaments enterprise. Cotinue development of a non-destructive test protocol that duplicates actual flight conditions for Precision-Guided Munitions and Cruise Missiles.	
<b>(U) \$2,178</b>	Develop and complete efforts associated with Inspection Technology for Turbine Engines (Congressional add).	
<b>(U) \$3,961</b>	Develop and complete efforts associated withAutomated Nondestructive Inspection Technology for Turbine Engine Sustainment (Congressional add).	
<b>(U) \$26,623</b>	Total	
<b>Project 2146</b>	<b>Page 2 of 6 Pages</b>	<b>Exhibit R-2 (PE 0708026F)</b>

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>	<b>PROJECT</b> <b>2146</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$1,838 Complete previous year 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 varied mediums; and transitioning new materials that present an improved strength-to-weight ratio resulting in greater payloads for both space and aircraft missions.</p> <p>(U) \$1,070 Continue airframe, subsystem, life support, and space reliability and maintainability efforts that reduce operations and support (O&amp;S) costs by reducing the overall maintenance burden, improving capabilities, reliability, and mission readiness.</p> <p>(U) \$934 Continue existing aging aircraft efforts to reduce Air Force O&amp;S costs. Expand the current tracking method for contingency data associated with system usage/configuration, premature failures, cost and supply. Continue development of improved efficiency air compressor.</p> <p>(U) \$925 Complete the existing efforts to address reduced O&amp;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.</p> <p>(U) \$4,767 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b> This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">21,032</td> <td style="text-align: center;">20,689</td> <td style="text-align: center;">24,108</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">21,227</td> <td style="text-align: center;">26,889</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;">-266</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-518</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 style="text-align: center;">-210</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-195</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">-19,341</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">20,304</td> <td style="text-align: center;">26,623</td> <td style="text-align: center;">4,767</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>Project 2146</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	21,032	20,689	24,108		(U) Appropriated Value	21,227	26,889			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-266			b. Small Business Innovative Research	-518				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-210				e. Rescissions	-195				(U) Adjustments to Budget Years Since FY 2002 PBR			-19,341		(U) Current Budget Submit/FY 2003 PBR	20,304	26,623	4,767	TBD
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Page 3 of 6 Pages		Exhibit R-2 (PE 0708026F)																																																							

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0708026F Productivity, Reliability, Availability, Maintainability Program</b>			PROJECT <b>2146</b>	
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>									
<b>(U) Significant Program Changes:</b> Program funding was reduced due to higher priority Air Force requirements.									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
<b>(U) AF RDT&amp;E</b>									
<b>(U) Other APPN</b>									
<b>(U) Related Activities:</b>									
<b>(U) PE 0605011F, RDT&amp;E for Aging Aircraft.</b>									
<b>(U) E. Acquisition Strategy</b>									
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.									
<b>(U) F. Schedule Profile</b>									
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4
<b>(U) Blade Repair Contract Award</b>			*						
<b>(U) Request For Proposal Release</b>		*	*						
<b>(U) Contract Awards</b>		*	*	*		X	X	X	
								X	X
									X
Project 2146									
Page 4 of 6 Pages									
Exhibit R-2 (PE 0708026F)									



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
07 - Operational System Development					0708026F Productivity, Reliability, Availability, Maintainability Program			2146		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>			<u>FY 2003</u>
(U)	Subsystem Reliability and Maintainability (R&M)					5,320	2,325			2,138
(U)	Airframe R&M					2,000	12,084			1,070
(U)	Aero Support Equipment and Base Infrastructure R&M					3,600	4,162			934
(U)	Space and Missile Systems Reliability					2,855	1,913			625
(U)	Blade Tip Repair Project					6,000	0			0
(U)	Quick Response R&M					529	0			0
(U)	Non-destructive Inspection Technology for Engine Sustainment						3,961			
(U)	Inspection Technology for Turbine Engine						2,178			
(U)	Total					20,304	26,623			4,767
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Numerous	Various	Various	N/A	N/A	3,028	7,768	18,749	2,055	Continuing	TBD
General Atomics	Various	Various	N/A	N/A	9,903	6,770	1,100		0	17,773
Lockheed Martin	Various	Various	N/A	N/A	510	1,500	1,500		0	3,510
ARINC	T&M	Feb 01	N/A	N/A	1,750	1,546	0		0	3,296
Innovative Technology	T&M	Feb 01	N/A	N/A	0	558	0		0	558
Battelle	T&M	Feb 01	N/A	N/A	0	150	150		0	300
MITRE	T&M	Jan 01	N/A	N/A	0	300	0		0	300
Lockheed Sanders	T&M	Mar 01	N/A	N/A	0	900	550		0	1,450
Southwest Research	T&M	Various	N/A	N/A	0	587	2,339	828	0	3,754
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 2002	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0708026F Productivity, Reliability, Availability, Maintainability Program					2146	
<b>(U) Performing Organizations Continued:</b>											
<u>Product Development Organizations</u>											
CACI	T&M	TBD	N/A	N/A	0	0	400	200	0	600	
NCI Information Systems	T&M	Various	N/A	N/A	0	50	1,108	936	0	2,094	
Survival Equipment Inc.	TBD	TBD	N/A	N/A	0	50	450	300	0	800	
SAIC	TBD		N/A	N/A	0	125	277	448		850	
<u>Support and Management Organizations</u>											
In-house support											
<u>Test and Evaluation Organizations</u>											
<b>(U) Government Furnished Property:</b>											
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development					15,191	20,304	26,623	4,767	TBD	TBD	
Subtotal Support and Management											
Subtotal Test and Evaluation											
Total Project					15,191	20,304	26,623	4,767	TBD	TBD	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708071F Joint Logistics Program - Ammunition System</b>				PROJECT <b>4679</b>		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4679	Ammunition Management Standard System	10,645	0	0	0	0	0	0	0	32,767
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
In FY2001, Project 4679, Ammunition Management Standard System, was terminated.										
<b>(U) A. Mission Description</b>										
The Air Force is the Executive Agent for Joint Ammunition Management Standard System (JAMSS). The JAMSS is the joint migration system being developed to improve and integrate ammunition management business functions and data across the Department of Defense (DoD). It directly supports the goals of the DoD Logistics Strategic Plan (1996 edition) to: reduce logistics response times, provide total asset visibility, develop seamless logistics systems, and streamline the logistics infrastructure.										
<b>(U) FY 2001 (\$ in Thousands)</b>										
<b>(U) \$4,500</b> Software Development (See Section C, Significant Program Changes)										
<b>(U) \$3,545</b> Support Contractors, Mission support, etc										
<b>(U) \$2,600</b> Mission Requirements Verification Review										
<b>(U) \$10,645</b> Total										
<b>(U) FY 2002 (\$ in Thousands)</b>										
<b>(U) \$0</b> No Activity										
<b>(U) \$0</b> Total										
<b>(U) FY 2003 (\$ in Thousands)</b>										
<b>(U) \$0</b> No Activity										
<b>(U) \$0</b> Total										
<b>(U) B. Budget Activity Justification</b>										
This program is in Budget Activity 7 - Operational System Development because it modernizes automated information systems.										
Project 4679				Page 1 of 5 Pages				Exhibit R-2 (PE 0708071F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708071F Joint Logistics Program - Ammunition System</b>			PROJECT <b>4679</b>		
<b>(U) C. Program Change Summary (\$ in Thousands)</b>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>			
(U)	Previous President's Budget	11,238	106	33					
(U)	Appropriated Value	11,238	0						
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions								
	b. Small Business Innovative Research	-400							
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram	-90							
	e. Rescissions	-103							
(U)	Adjustments to Budget Years Since FY 2002 PBR			-33					
(U)	Current Budget Submit/FY 2003 PBR	10,645	0	0		32,767			
<b>(U) Significant Program Changes:</b>									
In FY2001, the Department issued an Acquisition Decision Memorandum (ADM) terminating the program and directing an ammunition management mission area review to decide future direction of ammunition management. In conjunction with the termination and review, out year funding for this program has been returned to the Services to allow each Service to contribute to developing common ammunition logistics management systems. As a result of the halt in development, the AF in FY2001, as part of AF ATR sent to Congress, requested approval to reprogram \$4.5M from the program.									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>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)	Not Applicable								
<b>(U) E. Acquisition Strategy</b>									
DISA's Defense Enterprise Integration Services (DEIS II) contract was used to award the previous JAMSS development contract. DISA's DEIS II contract was awarded under full and open competition. Contractors selected under the DEIS II contract will compete for future business. Future acquisition strategy pending outcome of mission requirements verification review.									
Project 4679			Page 2 of 5 Pages			Exhibit R-2 (PE 0708071F)			

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

DATE  
**February 2002**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0708071F Joint Logistics Program - Ammunition System</b>	PROJECT <b>4679</b>
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**(U) F. Schedule Profile**

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Preliminary Prototype Review (Dec 99)												
(U) Initial Contractor Test												
(U) Contract Modification												
(U) New Acquisition Decision Memorandum												
(U) Revalidate Requirements												
(U) Program Termination												

\* - Denotes completed event.  
 X - Denotes planned event.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708071F Joint Logistics Program - Ammunition System			PROJECT 4679			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Software Development					4,500		0		0
(U)	Other Govt Costs					3,545		0		0
(U)	Government Furnished Equipment (GFE)/COTS					0		0		0
(U)	GFE and COTS software update, debug, maintenance					0		0		0
(U)	Mission Requirements Verification Review					2,600		0		0
(U)	Total					10,645		0		0
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Software Developer	Cost + Award Fee	7 Jul 97	43,254	45,774	13,156	4,500	0	0	0	17,656
Unknown	TBD			2,600	0	2,600	0	0	0	2,600
<u>Support and Management Organizations</u>										
Innolog, KPMG, MITRE, MCR			16,612	16,612	4,787	992	0	0	0	5,779
SPO WPAFB			17,528	17,528	1,450	2,553	0	0	0	4,003
GFE and COTS software update, debug, maintenance.	TBD	TBD	4,990	4,990	80	0	0	0	0	80
<u>Test and Evaluation Organizations</u>										
ATEC (Army OPTEC)			1,704	1,704	203	0	0	0	0	203
IV&V			1,600	1,600	200	0	0	0	0	200
Project 4679			Page 4 of 5 Pages				Exhibit R-3 (PE 0708071F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0708071F Joint Logistics Program - Ammunition System				4679	
<b>(U) Government Furnished Property:</b>									
<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 2001</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</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>									
COTS S/W and H/W	GSA Sc.	As Req'd	As Req'd	2,246	0	0	0	0	2,246
<u>Support and Management Property</u>									
COTS S/W and Hardware	GSA Sch.	As Req'd	As Req'd	0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
Shared with Development Resources									
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2001</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
Subtotal Product Development				15,402	7,100	0	0	0	22,502
Subtotal Support and Management				6,317	3,545	0	0	0	9,862
Subtotal Test and Evaluation				403	0	0	0	0	403
Total Project				22,122	10,645	0	0	0	32,767

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	39,825	29,937	35,813	55,547	53,795	52,649	53,531	Continuing	TBD
3318 Product Data Systems Modernization (PDSM)	4,654	2,849	4,595	10,869	8,273	6,137	6,164	Continuing	TBD
4654 Integrated Maintenance Data System (IMDS)	33,189	26,095	11,512	24,580	25,029	25,630	26,077	Continuing	TBD
4926 Reengineering and Enabling Technologies	1,982	993	0	0	0	0	0	0	2,975
5042 Log Application Logistics Integration (LALI)	0	0	7,292	7,267	7,245	7,383	7,528	Continuing	TBD
5044 Log Application ILS-S (LAJLS-S)	0	0	12,414	12,831	13,248	13,499	13,762	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>In FY2002, Congress added an additional \$5.0 million RDT&amp;E funds to SSD 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 is in the process of transferring these amounts to the correct programs. These funds have been appropriated to the IMDS project.</p> <p>In FY2003, Project 5044, Log Application ILS-S (LAJLS-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>									

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708611F Support Systems Development</b>
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(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 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	32,258	28,253	24,992	TBD
(U) Appropriated Value	40,858	30,221		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-284		
b. Small Business Innovative Research	-1,266			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	608			
e. Rescissions	-375			
(U) Adjustments to Budget Years Since FY 2002 PBR			10,821	TBD
(U) Current Budget Submit/FY 2003 PBR	39,825	29,937	35,813	TBD

(U) **Significant Program Changes:**  
 In FY 2001 Congress added an additional \$1.0 million in RDT&E funds for IMDS and \$2.0 million in RDT&E funds for RET. An additional \$5.6 million was added to the IMDS project for: Advanced Engine Simulation and Optimization Program (AESOP)(\$1.8 million), Aircraft and Systems Support Infrastructure (ASSI)(\$1.8 million), and Air Force Knowledge Management Program (\$2.0 million).

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

DATE

**February 2002**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0708611F Support Systems Development**

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

(U) **Significant Program Changes Continued:**

In FY2002, Congress added an additional \$5.0 Million to SSD 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 is in the process of transferring these amounts to the correct programs. These funds have been placed in the IMDS project.

The \$10.821 million increase in FY 2003 relates to the GCSS-AF restructure addressed in the footnote to the cost table on page 1.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>3318</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3318      Product Data Systems Modernization (PDSM)	4,654	2,849	4,595	10,869	8,273	6,137	6,164	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>            This project implements the Air Force portion of the Joint Computer-Aided Acquisition and Logistics System (JCALS) ensuring the uninterrupted transition of legacy system functional capabilities to the new joint systems. Beginning in FY01, the funding for the existing Automated Civil Engineer System (ACES) Program was moved into this project. ACES is the modernization of the Interim Work Information Management System (IWIMS) legacy system that supports Civil Engineering Management Information System requirements. In FY2003, a Technical Order (TO) Transformation Office will be set up to act as repository to manage digitization of tech order data and integration with JCALS activities.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$624                      Managed AF technical data activities            (U) \$49                        Sustained JEDMICS            (U) \$494                      Developed and maintained digital templates for new acquisition technical orders            (U) \$661                      Planned/participated in JCALS to ensure AF requirements are met            (U) \$1,204                    Activated AF JCALS sites to ensure timely and accurate data is available and useable            (U) \$157                      Tested digital data specifications/standards and represent AF at standards activities            (U) \$474                      Provided direct support to weapon systems, Logistics and Product Centers, and MAJCOMs            (U) \$991                      Automated Civil Engineer System (ACES)            (U) \$4,654                    Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$425                      Continue to manage AF technical data activities            (U) \$32                        Continue to Sustain 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) \$783                      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</p>									
Project 3318			Page 4 of 24 Pages				Exhibit R-2A (PE 0708611F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>		PROJECT <b>3318</b>				
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2002 (\$ in Thousands) Continued</u></b>										
(U)	\$310	Continue to provide direct support to weapon systems, Logistics and Product Centers, and MAJCOMs								
(U)	\$446	Automated Civil Engineer System (ACES)								
(U)	\$2,849	Total								
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>										
(U)	\$433	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)	\$788	Continue to activate AF JCALS sites to ensure timely and accurate data is available and useable								
(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	Automated Civil Engineer Systems (ACES)								
(U)	\$1,676	Tech Order (TO) Architecture Integration								
(U)	\$4,595	Total								
<b>(U) <u>B. Project Change Summary</u></b>										
N/A										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E									
(U)	Other APPN									
	Not Applicable									
<b>(U) <u>D. Acquisition Strategy</u></b>										
All major contracts awarded after full and open competition.										
Project 3318			Page 5 of 24 Pages			Exhibit R-2A (PE 0708611F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0708611F Support Systems Development</b>					<b>3318</b>				
<b>(U) <u>E. Schedule Profile</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) ACES Project Management Module Development (Complete)				*										
(U) ACES Housing Module Development					*									
(U) ACES Facilities Management								X						
(U) ACES Fire Dept Module Development									X					
(U) ACES Single Logical Data Model							X							
(U) ACES Readiness/Personnel Modules Development									X					
(U) ACES Operations Flight Module												X		
(U) ACES Environmental Flight Module									X					
* denotes completed event														
X denotes planned event														
Project 3318				Page 6 of 24 Pages				Exhibit R-2A (PE 0708611F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0708611F Support Systems Development</b>			<b>3318</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Manage AF technical data activities				624		425			433
(U)	Plan/participate/activate JEDMICS sites				49		32			33
(U)	Test digital data specifications/standards and represent AF at standards activities				157		102			104
(U)	Develop and maintain digital data templates for new acquisition technical orders				494		321			326
(U)	Plan/participate in JCALS to ensure AF requirements and schedules are met				661		430			437
(U)	Activate AF JCALS sites to ensure timely and accurate data is available and useable				1,204		783			788
(U)	Provide direct support to weapon systems, Logistics and Product Centers, and Major Commands (MAJCOMS)				474		310			315
(U)	Automated Civil Engineer System (ACES)				991		446			483
(U)	Tech Order (TO) Architecture Integration									1,676
(U)	Total				4,654		2,849			4,595
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>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	991	474	484	Continuing	TBD
<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	0	1,551	757	1,200	Continuing	TBD
LOGTEC	GSA	Var	N/A	N/A	10,527	1,622	1,203	600	Continuing	TBD
BTAS	GSA	Var	N/A	N/A	453	42	443	815	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	284	448	0	574	Continuing	TBD
TO Architecture Contractor								900	Continuing	TBD
Project 3318					Page 7 of 24 Pages			Exhibit R-3 (PE 0708611F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>				<b>0708611F Support Systems Development</b>				<b>3318</b>	
(U) <b>Performing Organizations Continued:</b>									
<u>Support and Management Organizations</u>									
(TBD)									
<u>Test and Evaluation Organizations</u>									
(U) <b>Government Furnished Property:</b>									
	<u>Contract</u>								
<u>Item</u>	<u>Method/Type</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>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
<u>Support and Management Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				0	991	474	484	TBD	TBD
Subtotal Support and Management				19,031	3,663	2,403	4,089	TBD	TBD
Subtotal Test and Evaluation				0	0	0	0	0	0
Total Project				19,031	4,654	2,877	4,573	TBD	TBD



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708611F Support Systems Development</b>	<b>PROJECT</b> <b>4654</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4654 Integrated Maintenance Data System (IMDS)	33,189	26,095	11,512	24,580	25,029	25,630	26,077	Continuing	TBD

In FY2002, Congress added an additional \$5.0 Million RDT&E funds to SSD 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 is in the process of transferring these amounts to the correct programs. These funds have been placed in the IMDS project.

In FY2003, Project 4654, Integrated Maintenance Data Systems efforts transferred \$10.4 Million to PE 0708012F, Logistics Support Activities, in order to provide funding to modernize Project 5054, Core Automated Maintenance System (CAMS).

**(U) A. Mission Description**

The Integrated Maintenance Data System (IMDS) is an information technology program to provide maintenance personnel all maintenance information assets 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).

**(U) FY 2001 (\$ in Thousands)**

- (U) \$18,190**                   IMDS System
- (U) \$2,321**                   Support Contractors (MITRE, Tecolote, SenCom)
- (U) \$4,078**                   SPO Operations.
- (U) \$3,000**                   Feeder Systems
- (U) \$1,800**                   Simulation Based Forecasting Decision Support Systems (SBFDSS)/Advanced Engine Simulation and Optimization Program (AESOP)
- (U) \$1,800**                   Aircraft and Systems Support Infrastructure (ASSI)
- (U) \$2,000**                   Air Force Knowledge Management Program (AFKMP)
- (U) \$33,189**                  Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0708611F Support Systems Development</b>	<b>4654</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$15,299 IMDS System</p> <p>(U) \$1,835 Support Contractors (MITRE, Tecolote, SenCom)</p> <p>(U) \$3,961 SPO Operations.</p> <p>(U) \$3,000 Center for Aircraft and Systems Support (CASS)</p> <p>(U) \$1,000 Commodity Management Systems Consolidation (CMSC)</p> <p>(U) \$1,000 Battlespace Logistics Readiness and Sustainment (BLRS)</p> <p>(U) \$26,095 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$10,512 IMDS System</p> <p>(U) \$225 Support Contractors (MITRE, Tecolote, SenCom)</p> <p>(U) \$775 SPO Operations.</p> <p>(U) \$11,512 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>In FY2001, Congress added an additional \$6.6 Million in RDT&amp;E funds for IMDS. Advanced Engine Simulation and Optimization Program (AESOP) (\$1.8 Million), Aircraft and Systems Support Infrastructure (ASSI) (\$1.8 Million), and Air Force Knowledge Management Program (AFKMP) (\$2.0 Million).</p> <p>In FY2002, Congress added an additional \$5.0 Million RDT&amp;E funds to SSD 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 is in the process of transferring these amounts to the correct programs. These funds have been placed in the IMDS project.</p> <p>In FY2003, \$10.4 Million RDT&amp;E was transferred from PE 0708611F, project 4654, Integrated Maintenance Data System (IMDS) to fund the modernization of CAMS (project 5054, PE 0708012F). The CAMS system will be replaced by IMDS, but modernization efforts are required to bring CAMS up to a certain level of sophistication before it can be converted to IMDS.</p>		
Project 4654	Page 10 of 24 Pages	Exhibit R-2A (PE 0708611F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development				PROJECT 4654	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Other Procurement AF, IMDS (PE 0708611F).	2,472	2,612	2,570	2,630	2,675	2,662	2,696	Continuing	TBD
(U) Operations & Maintenance AF, IMDS (PE 0708611F)	1,763	1,815	1,828	1,850	1,814	1,922	1,955	Continuing	TBD
<b>(U) D. Acquisition Strategy</b>									
All major contracts awarded after full and open competition.									
<b>(U) E. Schedule Profile</b>									
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>
			1	2	3	4	1	2	3
(U) Release 1 (F-22 Upgrade)							X		
(U) F-22 Green Screen					*				
(U) CAMS GUI							X		
(U) F-22 Interface Test							X		
(U) Release 2 (CAMS Modernization)								X	
* denotes completed event									
X denotes planned event									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 4654		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	IMDS System					18,190		15,299		10,512
(U)	Support Contractors (MITRE, Tecolote, SenCom)					2,321		1,835		225
(U)	SPO Operations					4,078		3,961		775
(U)	Feeder Systems					3,000		0		0
(U)	Simulation Based Forecasting Decision Support Systems (SBFDSS)/Advanced Engine Simulation and Optimization Program (AESOP)					1,800		0		0
(U)	Aircraft and Systems Support Infrastructure (ASSI)					1,800		0		0
(U)	Air Force Knowledge Management Program (AFKMP)					2,000		0		0
(U)	Center for Aircraft Systems and Support (CASS)					0		3,000		0
(U)	Commodity Management System Consolidation (CMSC)					0		1,000		0
(U)	Battle Space Logistics Readiness and Sustainment (BLRS)					0		1,000		0
(U)	Total					33,189		26,095		11,512
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</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	3,185	1,457	0	Continuing	TBD
LMSI-O	CPAF	19-Apr-01	N/A	N/A	0	2,165	1,200	929	Continuing	TBD
TSRI	CR/FFP	23 Oct 01	N/A	N/A	0	0	1,219	1,000	Continuing	TBD
SEI	CR	20 Jun 01	N/A	N/A	0	450	500	500	Continuing	TBD
EDW	Varies	Varies	N/A	N/A	0	4,919	4,940	4,940	Continuing	TBD
Project 4654					Page 12 of 24 Pages			Exhibit R-3 (PE 0708611F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
07 - Operational System Development										February 2002
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT
07 - Operational System Development					0708611F Support Systems Development					4654
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Portal	Varies	Varies	N/A	N/A	0	1,750	500	0	Continuing	TBD
Development Contracts (Support, TSPR)	Varies	Varies				5,721	5,483	3,143	Continuing	TBD
SBFDSS/AESOP	TBD	TBD	N/A	N/A	0	1,800	0	0	0	1,800
ASSI	TBD	TBD	N/A	N/A	0	1,800	0	0	0	1,800
AFKMP	TBD	TBD	N/A	N/A	0	2,000	0	0	0	2,000
RET/ARRRT	TBD	TBD	N/A	N/A	0	0	0	0	0	0
Feeder Systems	TBD	TBD	N/A	N/A	0	3,000	0	0	0	3,000
CASS	TBD	TBD	N/A	N/A	0	0	3,000	0	0	3,000
CMSC	TBD	TBD	N/A	N/A	0	0	1,000	0	0	1,000
BSLRS	TBD	TBD	N/A	N/A	0	0	1,000	0	0	1,000
<u>Support and Management Organizations</u>										
Support Contractors	Var	Var	N/A	N/A	10,058	2,321	1,835	225	Continuing	TBD
SPO Operations	N/A	N/A	N/A	N/A	5,818	4,078	3,961	775	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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					59,490	26,790	20,299	10,512	TBD	TBD
Subtotal Support and Management					15,876	6,399	5,796	1,000	TBD	TBD
Subtotal Test and Evaluation					0	0	0	0	TBD	TBD
Total Project					75,366	33,189	26,095	11,512	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>4926</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4926 Reengineering and Enabling Technologies	1,982	993	0	0	0	0	0	0	2,975
Note: Congress added \$2 million in RDT&E funds in FY2001.									
(U) <b><u>A. Mission Description</u></b> 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.  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.									
(U) <b><u>FY 2001 (\$ in Thousands)</u></b> (U) \$1,000 Business Process Reengineering (BPR) and Change Management Research (U) \$600 Senior Leader Quick Response Studies (U) \$382 Data Management Tools and Associated Activities (U) \$1,982 Total									
(U) <b><u>FY 2002 (\$ in Thousands)</u></b> (U) \$501 Business Process Reengineering (BPR) and Change Management Research (U) \$300 Senior Leadership Quick Response Studies (U) \$192 Data Management Tools and Associated Activities (U) \$993 Total									
Project 4926			Page 14 of 24 Pages				Exhibit R-2A (PE 0708611F)		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>4926</b>		
(U) <b><u>A. Mission Description Continued</u></b>										
(U) <u>FY 2003 (\$ in Thousands)</u>										
(U) \$0 No Activity										
(U) \$0 Total										
(U) <b><u>B. Project Change Summary</u></b>										
In FY2001 Congress added \$2 million in RDT&E funds for Reengineering and Enabling Technologies										
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E										
(U) Other APPN										
Not applicable										
(U) <b><u>D. Acquisition Strategy</u></b>										
All major contracts awarded after full and open competition										
(U) <b><u>E. Schedule Profile</u></b>										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4	
(U) GSA Contract Awarded			*							
* denotes completed event										
X denotes planned event										
Project 4926			Page 15 of 24 Pages				Exhibit R-2A (PE 0708611F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development			PROJECT 4926		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Business Process Reengineering (BPR) and Change Management Research					1,000	501	0		
(U)	Senior Leader Quick Response Studies					600	300	0		
(U)	Data Management Tools and Associated Activities					382	192	0		
(U)	Total					1,982	993	0		
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
(U) <b><u>Performing Organizations:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
DSD Labs	GSA	TBD	N/A	N/A	0	1,982	993	0	0	2,975
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development				0	1,982	993	0	0	2,975
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project				0	1,982	993	0	0	2,975



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708611F Support Systems Development				PROJECT 5042	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5042 Log Application Logistics Integration (LALI)	0	0	7,292	7,267	7,245	7,383	7,528	Continuing	TBD
<p>In FY 2003, PE 0708611F, Support Systems Development, 5042, Log Application Logistics Integration (LALI) efforts were transferred from PE 0303141F, Global Command Support System (GCSS), 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) <b><u>A. Mission Description</u></b>            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>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 No Activity            (U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>            (U) \$964 Program Management Office (PMO) Support            (U) \$624 PMO Task            (U) \$662 Base Support            (U) \$1,399 Support Contractors            (U) \$3,643 Integration Task Contracts            (U) \$7,292 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>            N/A</p>									
Project 5042			Page 17 of 24 Pages				Exhibit R-2A (PE 0708611F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development						PROJECT 5042			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>														
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U)	AF RDT&E													
(U)	Other APPN													
<b>(U) D. Acquisition Strategy</b>														
All major contracts awarded after full and open competition.														
<b>(U) E. Schedule Profile</b>														
				<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>					
			1	2	3	4	1	2	3	4	1	2	3	4
(U)	IL Portal Components													
(U)	Business Object Document Development													
(U)	Metadata Repository													
(U)	Program Handbooks													
(U)	IDW Preliminary Architecture													
	* - Completed Event													
	X - Planned Event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0708611F Support Systems Development</b>			<b>5042</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Program Management Office (PMO) Support					0		0		964
(U)	PMO Task					0		0		624
(U)	Base Support					0		0		662
(U)	Support Contractors					0		0		1,399
(U)	Integration Task Contracts					0		0		3,643
(U)	Total					0		0		7,292
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
										<u>Total</u>
										<u>Program</u>
<u>Product Development Organizations</u>										
	LMSI	CPAF	Varies	N/A	N/A	0		827	Continuing	TBD
	Oracle	BPA	Varies	N/A	N/A	0		793	Continuing	TBD
	Sytel	BPA	Varies	N/A	N/A	0		876	Continuing	TBD
	SSG Software Factory	SLA Annex	1 Oct	N/A	N/A	0		270	Continuing	TBD
	MITRE	FFRDC	1 Oct	N/A	N/A	0		91	Continuing	TBD
	Task Contractors	Varies	Varies	N/A	N/A	0		681	Continuing	TBD
	PMO Tasks	N/A	1 Oct	N/A	N/A	0		367	Continuing	TBD
<u>Support and Management Organizations</u>										
	PMO Support	N/A	1 Oct	N/A	N/A	0		972	Continuing	TBD
	Base Support	N/A	1 Oct	N/A	N/A	0		663	Continuing	TBD
	Support Contractors	Varies	Varies	N/A	N/A	0		1,399	Continuing	TBD
	MITRE	FFRDC	1 Oct	N/A	N/A	0		91	Continuing	TBD
Project 5042										
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Exhibit R-3 (PE 0708611F)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>				<b>0708611F Support Systems Development</b>			<b>5042</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>									
<u>Test and Evaluation Organizations</u>									
PMO Tasks	N/A	1 Oct	N/A	N/A	0	102	Continuing	TBD	
Software Factory	SLA Annex	1 Oct	N/A	N/A	0	69	Continuing	TBD	
MITRE	FFRDC	1 Oct	N/A	N/A	0	91	Continuing	TBD	
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>									<u>Total</u>
Subtotal Product Development					0			3,905	TBD
Subtotal Support and Management					0			3,125	TBD
Subtotal Test and Evaluation					0			262	TBD
Total Project					0			7,292	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708611F Support Systems Development</b>				PROJECT <b>5044</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5044 Log Application ILS-S (LAJLS-S)	0	0	12,414	12,831	13,248	13,499	13,762	Continuing	TBD
<p>In FY2003, Project 5044, Log Application Integrated Logistics System - Supply (LAJLS-S), efforts were transferred from PE 0303141F, Global Combat Support System (GCSS), 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) <b><u>A. Mission Description</u></b>                      The primary focus of the Log Application Integrated Logistics System - Supply (LAJLS-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.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 No Activity                      (U) \$0 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$8,145 Component Development                      (U) \$800 Logistics Business Area Integration                      (U) \$600 Logistics Requirements Analysis                      (U) \$1,760 SPO Operations (Labor, Management Support)                      (U) \$1,109 Supply Modernization                      (U) \$12,414 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      N/A</p>									
Project 5044	Page 21 of 24 Pages				Exhibit R-2A (PE 0708611F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002					
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708611F Support Systems Development					PROJECT 5044					
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>															
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>						
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>							
(U)	AF RDT&E														
(U)	Other APPN Not Applicable.														
<b>(U) D. Acquisition Strategy</b>															
All major contracts awarded after full and open competition.															
<b>(U) E. Schedule Profile</b>															
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U)	Supply Modernization														
(U)	--Release 4														
(U)	Component Development (Ongoing from BPAC 674655)														
(U)	Software Release to support RIT Initiative														
	* - Completed Event														
	X - Planned Event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0708611F Support Systems Development</b>				<b>5044</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Supply Modernization					0		0			1,109
(U)	Logistics Business Area Integration					0		0			800
(U)	Logistics Requirements Analysis					0		0			600
(U)	SPO Operations (Labor, Management Support)					0		0			1,760
(U)	Component Development					0		0			8,145
(U)	Total					0		0			12,414
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<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>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>
										<u>FY 2002</u>	<u>Budget</u>
										<u>FY 2003</u>	<u>Budget to</u>
											<u>Complete</u>
											<u>Total</u>
											<u>Program</u>
<u>Product Development Organizations</u>											
	Lockheed Martin		IDIQ		15 Aug 95		N/A		N/A		800
	SSG/SW (Software Factory)		SLA		1 Oct		N/A		N/A	0	1,109
	Keane Federal System		IDIQ		3 Aug 01		N/A		N/A	0	8,145
	(Component Developer)										
<u>Support and Management Organizations</u>											
	Support Contractors		Various		Various		N/A		N/A	0	600
	SPO Operations		N/A		N/A		N/A		N/A	0	1,760
<u>Test and Evaluation Organizations</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 2002				
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT				
<b>07 - Operational System Development</b>	<b>0708611F Support Systems Development</b>	<b>5044</b>				
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	10,054	TBD	TBD
Subtotal Support and Management	0	0	0	2,360	TBD	TBD
Subtotal Test and Evaluation						
Total Project	0	0	0	12,414	TBD	TBD



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708612F Computer Resources Support Improvement Program				PROJECT 4851		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4851	Embedded Comp Res Spt Prog Impr	3,237	2,353	2,094	2,250	2,312	2,349	2,374	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>            This program improves the support of mission-critical software intensive systems. It encompasses automation and standardization of support processes, advanced support methodologies, tools and environments, and readiness support to facilitate rapid turnaround of software in response to changing mission and/or changing threat requirements.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$345      Continued developing adaptive software technologies. Developed and validated a design architecture for the embedded avionics application domain. Completed development of an application design methodology to integrate commercial and emerging technologies into platform-independent, resource adaptive applications. Conducted technology demonstrations in designated platforms. Transferred adaptive technologies to weapon systems to support embedded software that can respond to both mission profile changes and dynamic mission events.</p> <p>(U) \$165      Developed technologies and methodologies to upgrade legacy systems. Validated and matured specific proven technologies that will enable cost-effective, incremental improvements to fielded embedded information systems, allowing the affordable integration of legacy systems with other weapon systems and command and control platforms. Incorporated the use of open system standards in these technologies and methodologies.</p> <p>(U) \$340      Completed development of Reconfigurable Aerospace Computer Emulators to improve the reliability and maintainability of aging/obsolete on-board aerospace computers. Validated developed technologies to replace on-board computers with commercial microprocessor-based computer emulation technology. Demonstrated the methodologies developed to implement the incremental upgrades of on-board computers with new commercial-off-the-shelf processors, and demonstrated their backward compatibility with existing mission critical software.</p> <p>(U) \$75      Continued supporting the development of the Real-Time Defense Information Infrastructure Common Operating Environment. Developed and tested technical approaches to integrate reuse and commonality to improve the effectiveness of systems performing real-time command and control missions.</p> <p>(U) \$250      Continued developing a Virtual Engineering Environment (VEE) for software development. Developed a test environment incorporating new</p>										
Project 4851		Page 1 of 9 Pages							Exhibit R-2 (PE 0708612F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>February 2002</b> <b>4851</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2001 (\$ in Thousands) Continued</u></b></p> <p>technologies, commercial-off-the-shelf components, and existing technologies. Evaluated the capabilities of the VEE to significantly improve embedded software development and testing, and to reduce facility acquisition and maintenance costs. Demonstrated the effectiveness of VEE in supporting current and next generation weapon systems software development and test environments.</p> <p>(U) \$750 Completed development of the Weapon System Open Architecture (WSOA). Developed a 'virtual backplane' with an Open System Architecture to bridge the different embedded avionics and command, control, communications, and intelligence (C3I) systems across multiple aircraft platforms. Demonstrated and tested the ability of the WSOA to support multiple requests for imagery, targeting data, and other situational information between fighter aircraft and an airborne C3I platform.</p> <p>(U) \$0 Developed technologies to implement Assured Middleware for Real-Time Embedded Systems (AMRES). Conducted trade-off studies and technical and cost benefit analyses between different real-time, fault-tolerance, and security concepts to implement an adaptable AMRES. Designed the AMRES environment using the Real-Time Common Object Request Broker Architecture to integrate the components and concepts selected from the analyses.</p> <p>(U) \$55 Continued the Embedded Systems Interoperability Demonstration. Continued maturing the technologies developed under the WSOA to implement an interface between embedded systems operating on multiple tactical platforms with the C2 battlespace infosphere.</p> <p>(U) \$60 Continued development of the Embedded Information System Re-engineering Technology. Continued design and development of an automated re-engineering capability to evolve software for embedded information systems. Continued development of the software tools to implement re-engineering technologies.</p> <p>(U) \$220 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 systems concepts, processes, and tools. Evaluated the capabilities and applicability of RT Java to the areas of architecture, distributed processing, and interoperability.</p> <p>(U) \$977 Developed air resources rapid reallocation tools to support the real-time automated allocation of embedded resources in a dynamic battlespace environment. Conducted requirements analyses to prioritize the development of reallocation technologies. Completed the system design and architecture using open system standards. Identified pilot programs to demonstrate the reallocation tools.</p> <p>(U) \$3,237 Total</p>		
Project 4851	Page 2 of 9 Pages	Exhibit R-2 (PE 0708612F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>4851</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$566 Continue the development of technologies and methodologies to incrementally upgrade legacy systems to support their cost-effective employment and sustainment. Demonstrate, in designated aircraft, the processes and tools for wrapping embedded software, real-time object request broker technology, and emulation technology in fielded weapon systems. Transition these technologies to fighter and cargo aircraft.</p> <p>(U) \$80 Continue supporting the development of the Real-Time Defense Information Infrastructure Common Operating Environment. Continue developing and testing technologies to improve the effectiveness of systems performing real-time command and control (C2) missions. Evaluate the effectiveness of these approaches in implementing a seamless information exchange between the different platforms operating in the battlespace.</p> <p>(U) \$334 Continue the development of Assured Middleware for Real-Time Embedded Systems (AMRES). Complete 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. Mature and demonstrate the ability of AMRES to support real-time processes, fault-tolerance, and security in embedded systems.</p> <p>(U) \$599 Continue the Embedded Systems Interoperability Demonstration. Continue 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. Conduct simulation tests to evaluate real-time communications capabilities. Conduct affordability analyses to support the demonstration.</p> <p>(U) \$550 Continue developing the Embedded Information System Re-engineering (EISR) technology demonstration. Complete development of an automated re-engineering capability to evolve software for embedded information systems. Complete development of the software tools to implement re-engineering technologies. Test and demonstrate an EISR system with an established pilot program. Transition the EISR technologies to customers.</p> <p>(U) \$224 Continue 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 systems concepts. Demonstrate the functionality of legacy Operational Flight Programs (OFPs) implemented in RT Java. Analyze and compare the implementation of RT Java OFPs with current OFPs implemented in higher-order languages. Demonstrate the capability of RT Java OFPs to support the interoperability between the Command, Control, Communications, and Intelligence.</p> <p>(U) \$2,353 Total</p>		
Project 4851	Page 3 of 9 Pages	Exhibit R-2 (PE 0708612F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		<b>DATE</b> February 2002
<b>BUDGET ACTIVITY</b>	<b>PE NUMBER AND TITLE</b>	<b>PROJECT</b>
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>4851</b>
<b>(U) <u>A. Mission Description Continued</u></b>		
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$469	Continue development of technologies and methodologies to 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 in fielded weapon systems. Continue transition of these technologies as they are matured and validated.	
(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.	
(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.	
(U) \$525	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 systems components. Complete affordability analyses. Develop test plans and procedures to conduct flight testing to evaluate the real-time communications capabilities of these components.	
(U) \$530	Continue development of the Embedded Information System Re-engineering (EISR) Technology. Complete development of an automated re-engineering capability to evolve software for embedded information systems. Continue development of the software tools 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) \$225	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) \$225	Develop affordable Information Assurance and system security techniques and technologies for embedded information systems in aerospace	
Project 4851	Page 4 of 9 Pages	Exhibit R-2 (PE 0708612F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
<b>07 - Operational System Development</b>	<b>0708612F Computer Resources Support Improvement Program</b>	<b>4851</b>			
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2003 (\$ in Thousands) Continued</u></b>					
	and ground-based platforms. Conduct domain analyses to define the requirements for Information Assurance technologies. Develop and conduct prototype testing to address threats and vulnerability countermeasures relative to a tactical system operating as a node within a Command and Control environment.				
<b>(U) \$2,094</b>	<b>Total</b>				
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7, Operational System Development, because it provides support to operational systems.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
<b>(U)</b>	Previous President's Budget	3,326	2,376	2,432	TBD
<b>(U)</b>	Appropriated Value	3,356	2,376		
<b>(U)</b>	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-23		
	b. Small Business Innovative Research	-57			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-32			
	e. Rescissions	-30			
<b>(U)</b>	Adjustments to Budget Years Since FY 2002 PBR			-338	
<b>(U)</b>	Current Budget Submit/FY 2003 PBR	3,237	2,353	2,094	TBD
<b>(U) <u>Significant Program Changes:</u></b>					
In FY 2001, funding was moved to this PE from PE 0708611F, Project 673090.					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0708612F Computer Resources Support Improvement Program</b>				PROJECT <b>4851</b>			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E											
(U) Other APPN											
(U) PE 0708611F/3080									4,593		
(U) PE 0708611F/3400											
(U) PE 0708612F/3080	2,138	2,328	2,094	2,148	2,187	2,279	2,334	Continuing	Continuing		
(U) PE 0708612F/3400	13,988	14,462	8,879	9,151	8,962	9,423	9,357	Continuing	Continuing		
<b>(U) E. Acquisition Strategy</b>											
All major contracts within this Program Element were awarded after full and open competition.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Adaptive Software Technology Development						*					
(U) Incremental Upgrade of Legacy Systems					*			X			X
(U) Reconfigurable Aerospace Computer Emulator									X		
(U) Real-Time DII COE Support **					*			X			
(U) Virtual Engineering Environment						*					X
(U) Weapon System Open Architecture						*					
(U) Assured Middleware for Real-Time Embedded Systems								X			
(U) Embedded Systems Interoperability Demonstration									X		
(U) Embedded Information Systems Re-engineering					*				X		X
(U) Real-Time Java for Embedded Systems									X		
(U) Air Resources Rapid Reallocation Tools											*
(U) Embedded Information Systems Assurance										X	
Project 4851											
Page 6 of 9 Pages											
Exhibit R-2 (PE 0708612F)											

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0708612F Computer Resources Support Improvement Program</b>	<b>PROJECT</b> <b>4851</b>
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(U) **F. Schedule Profile Continued**

<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
1	2	3	4	1	2	3	4	1	2	3	4

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 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0708612F Computer Resources Support Improvement Program</b>			<b>4851</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Adaptive Software Technology Development				345		0			0
(U)	Incremental Upgrade of Legacy Systems				165		566			469
(U)	Reconfigurable Aerospace Computer Emulator				340		0			60
(U)	Real-Time Defense Information Infrastructure Common Operating Environment Support				75		80			0
(U)	Virtual Engineering Environment				250		0			60
(U)	Weapon System Open Architecture				750		0			0
(U)	Assured Middleware for Real-Time Embedded Systems				0		334			0
(U)	Embedded Systems Interoperability Demonstration				55		599			525
(U)	Embedded Information Systems Re-engineering				60		550			530
(U)	Real-Time Java for Embedded Systems				220		224			225
(U)	Air Resources Rapid Reallocation Tools				977		0			0
(U)	Embedded Information Systems Assurance				0		0			225
(U)	Total				3,237		2,353			2,094
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
SAIC	DO	Various	N/A	N/A		250	50	0	Continuing	TBD
TRW	DO	Various	N/A	N/A		285	220	0	Continuing	TBD
Boeing	DO	Various	N/A	N/A		1,906	891	1,070	Continuing	TBD
Lockheed-Martin	DO	Various	N/A	N/A		721	992	824	Continuing	TBD
Raytheon	DO	Various	N/A	N/A			200	200	Continuing	TBD
Project 4851					Page 8 of 9 Pages			Exhibit R-3 (PE 0708612F)		



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0708612F Computer Resources Support Improvement Program				4851	
<b>(U) Performing Organizations Continued:</b>									
<u>Product Development Organizations</u>									
Other (RT DII COE)	Various	N/A	N/A	75	0	0	Continuing	TBD	
<u>Support and Management Organizations</u>									
<u>Test and Evaluation Organizations</u>									
<b>(U) Government Furnished Property:</b>									
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					3,237	2,353	2,094	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project					3,237	2,353	2,094	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								<b>DATE</b> February 2002	
<b>BUDGET ACTIVITY</b> 07 - Operational System Development				<b>PE NUMBER AND TITLE</b> 0901212F SERVICE-WIDE SUPPORT				<b>PROJECT</b> 5060	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5060 Joint Personnel Adjudication System (JPAS)	0	0	4,090	4,473	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
POM-ing for outyear requirements in process. (U) <b><u>A. Mission Description</u></b> JPAS is the Department of Defense (DoD) personnel security migration 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 (DoD CAF personnel only) and the Joint Clearance and Access Verification System for approximately 20,000 CAF customers (non-SCI and SCI {Sensitive Compartmented Information} security managers ) and 10,000 industry security managers. Previously funded with O&M dollars; however, current development activities are more appropriately funded using RDT&E dollars. (U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total (U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total (U) <u>FY 2003 (\$ in Thousands)</u> (U) \$1,600 Implement/Integrate Automated Civil Engineering System (ACES). (U) \$900 Interface Enhancements (U) \$1,000 PKI/CAC (U) \$590 Program Office (U) \$4,090 Total									
Project 5060	Page 1 of 5 Pages				Exhibit R-2 (PE 0901212F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0901212F SERVICE-WIDE SUPPORT</b>				PROJECT <b>5060</b>		
(U) <b><u>B. Budget Activity Justification</u></b>										
This effort is in Budget Activity 7, Operational System Development, because the program modernizes automated information systems.										
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			<u>Total Cost</u>	
(U)	Previous President's Budget								0	
(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 2002 PBR								4,090	
(U)	Current Budget Submit/FY 2003 PBR								4,090	TBD
(U) <b><u>Significant Program Changes:</u></b>										
Funding realigned in FY03 and 04 from O&M to RDT&E per DoD IG Report. POM-ing for outyear funding.										
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E									
(U)	Other APPN									
(U)	6,500	8,200	4,100	4,400	5,000	6,500	7,100	Continuing		
(U) <b><u>E. Acquisition Strategy</u></b>										
The JPAS PMO routinely uses existing government contracting vehicles to purchase COTS products.										
(U) <b><u>F. Schedule Profile</u></b>										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
<b>07 - Operational System Development</b>				<b>0901212F SERVICE-WIDE SUPPORT</b>				<b>5060</b>				
<b>(U) <u>F. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Implement/Integrate ACES								X			
(U)	Develop SAP capability and e-RFA									X		
(U)	Identify and develop requirements for Portal Migration										X	
Project 5060												
Page 3 of 5 Pages												
Exhibit R-2 (PE 0901212F)												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0901212F SERVICE-WIDE SUPPORT			PROJECT 5060			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	ACES Cost Projection									1,600	
(U)	Interface Enhancements									900	
(U)	PKI/CAC									1,000	
(U)	Program Office									590	
(U)	Total									4,090	
(U) <b><u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>											
(U) <b><u>Performing Organizations:</u></b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	EDS	FFP	1 Nov 02	TBD	TBD				2,600	Continuing	TBD
	<u>Support and Management Organizations</u>										
	SPO Support								590	Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	HAI - IV&V; Training	FFP	1 Nov 02	TBD	TBD				900	Continuing	TBD
(U) <b><u>Government Furnished Property:</u></b>											
	<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	N/A										
	<u>Support and Management Property</u>										
	N/A										
Project 5060					Page 4 of 5 Pages			Exhibit R-3 (PE 0901212F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE	
BUDGET ACTIVITY		PROJECT	
<b>07 - Operational System Development</b>	<b>0901212F SERVICE-WIDE SUPPORT</b>	<b>February 2002</b>	
<p>(U) <u>Government Furnished Property Continued:</u></p> <p><u>Test and Evaluation Property</u></p> <p>N/A</p>			
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
		<u>Budget</u>	<u>Budget to</u>
		<u>FY 2003</u>	<u>Complete</u>
			<u>Total</u>
<u>Subtotals</u>			
Subtotal Product Development		2,600	TBD
Subtotal Support and Management		590	TBD
Subtotal Test and Evaluation		900	TBD
Total Project		4,090	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0901218F Civilian Compensation Program				PROJECT 4139	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4139 Civilian Compensation Program	7,063	6,949	7,132	7,262	7,403	7,610	7,822	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>                      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) <b><u>FY 2001 (\$ in Thousands)</u></b>                      (U) \$7,063 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease                      (U) \$7,063 Total</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$6,949 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease.                      (U) \$6,949 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$7,132 Required to continue a program to compensate employees assigned to RDT&amp;E facilities for worked-related injury or disease.                      (U) \$7,132 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>                      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 2002			
BUDGET ACTIVITY						PE NUMBER AND TITLE						PROJECT		
<b>07 - Operational System Development</b>						<b>0901218F Civilian Compensation Program</b>						<b>4139</b>		
<b>(U) C. Program Change Summary (\$ in Thousands)</b>														
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>				<u>Total Cost</u>		
(U)	Previous President's Budget					7,143	7,019	7,149				TBD		
(U)	Appropriated Value					7,143	7,019							
(U)	Adjustments to Appropriated Value													
	a. Congressional/General Reductions						-70							
	b. Small Business Innovative Research													
	c. Omnibus or Other Above Threshold Reprogram													
	d. Below Threshold Reprogram													
	e. Rescissions					-80								
(U)	Adjustments to Budget Years Since FY 2002 PBR							-17						
(U)	Current Budget Submit/FY 2003 PBR					7,063	6,949	7,132				TBD		
(U)	<u>Significant Program Changes:</u>													
	N/A													
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>														
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>			<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>			<u>Complete</u>			
(U)	AF RDT&E													
(U)	Other APPN													
(U)	Operation and Maintenance					23,528	25,245	25,759	26,789	27,860	0	TBD		
<b>(U) E. Acquisition Strategy</b>														
	N/A													
<b>(U) F. Schedule Profile</b>														
						<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</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 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0901218F Civilian Compensation Program</b>				<b>4139</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U) n/a										
(U) Total										
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</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										
<b>(U) Government Furnished Property:</b>										
	<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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										
Project 4139				Page 3 of 4 Pages				Exhibit R-3 (PE 0901218F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE
BUDGET ACTIVITY						PROJECT
<b>07 - Operational System Development</b>						<b>4139</b>
PE NUMBER AND TITLE						
<b>0901218F Civilian Compensation Program</b>						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</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 2002	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0901538F FIRST</b>				PROJECT <b>5036</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5036 Financial Information Resource System (FIRST)	0	0	21,326	16,212	13,006	13,611	14,240	Continuing	TBD
Quantity of RDT&E Articles	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.

(U) **A. Mission Description**  
 FIRST is a software development effort aimed at providing 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 and includes five increments. These increments include Acquire Accounting, Budget Formulation, Funds Management, Budget Execution, and Cost Modeling. FIRST will be compliant with the Joint Technical Architecture (JTA) 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 Budget and Accounting Classification Codes 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.

(U) **FY 2001 (\$ in Thousands)**  
 (U) \$0 No Activity  
 (U) \$0 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0901538F FIRST</b>		<b>5036</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>					
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U)	\$2,800	Application Development for Acquire Accounting			
(U)	\$6,000	Application Development for Budget Formulation			
(U)	\$6,071	Application Development for Budget Estimation			
(U)	\$3,254	GCSS-AF Integration			
(U)	\$3,201	Development of legacy system functionality into FIRST.			
(U)	\$21,326	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7, Operational System Development, because the program modernizes Automated Information Systems (AISs).					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	0	0	0	TBD
(U)	Appropriated Value	0	0		
(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 2002 PBR			21,326	TBD
(U)	Current Budget Submit/FY 2003 PBR	0	0	21,326	TBD
Project 5036		Page 2 of 4 Pages		Exhibit R-2 (PE 0901538F)	

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0901538F FIRST</b>				PROJECT <b>5036</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
<b>(U) Significant Program Changes:</b> FIRST was accelerated and received additional funding in the FY03-07 budget. (Funding for FIRST prior to FY03 is in PE 0303141F.)										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	8,450	8,673							
(U)	O&M, AF; PE 38601F	2,375	2,900	3,300	3,500	3,500	3,500	3,500	Continuing	Continuing
RDT&E Funding in FY01 and FY02 in PE 0303141F.										
<b>(U) E. Acquisition Strategy</b> All major contracts awarded after full and open competition.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2	3
								1	2	3
(U)	Acquire Accounting Test & Deployment									X
(U)	Budget Formulation Spiral 2 Readiness Review									X
(U)	Begin Budget Execution									X
(U)	Develop Legacy system functionality into FIRST									X
(U)	GCSS-AF Budget Formulation Integration Test								X	X
* - Completed Event										
X - Planned Event										
Project 5036				Page 3 of 4 Pages				Exhibit R-2 (PE 0901538F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0901538F FIRST</b>			<b>5036</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Application Development for Acquire Accounting					0		0		2,800	
(U)	Application Development for Budget Formulation					0		0		6,000	
(U)	Application Development for Budget Execution					0		0		6,071	
(U)	GCSS-AF Integration					0		0		3,254	
(U)	Develop legacy system functionality into FIRST					0		0		3,201	
(U)	Total					0		0		21,326	
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
<b>(U) Performing Organizations:</b>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Accenture	CPAF	2 Apr 01	40,854	40,854	0	0	0	18,072	Continuing	TBD
	Lockheed Martin SI	CPAF	17 Dec 01	TBD	TBD	0	0	0	3,254	Continuing	TBD
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
	<u>Subtotals</u>					<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Subtotal Product Development					0	0	0	21,326	TBD	TBD
	Subtotal Support and Management										
	Subtotal Test and Evaluation										
	Total Project					0	0	0	21,326	TBD	TBD



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>	DATE <b>February 2002</b>
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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>1001018F NATO AGS</b>	<b>PROJECT</b> <b>0002</b>
--	--	-------------------------------

	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0002    NATO JSTARS	4,640	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	TBD

(U) **A. Mission Description**  
 The NATO Staff Requirement (NSR) for an Alliance Ground Surveillance (AGS) System, Oct 97, states the requirement for a NATO owned and operated capability to '...detect, locate, recognize and track specified activities on and near the surface and disseminate related data in timely manner, and thereby contribute to the successful accomplishment of the NATO military operations....' In Nov 97 the NATO Conference of National Armaments Directors (CNAD) rejected a US 'fast track' offer of the US JSTARS system to meet the AGS requirement, and directed the AGS Provisional Project Structure (PPS) to look at fresh options to satisfy the requirement. In Dec 97 the US offered the JSTARS Radar Technology Insertion Program (RTIP) advanced sensor on a platform of NATO's choice. In Apr 98 the CNAD endorsed the PPS recommendation for conducting a one year Concept Definition Study (CDS) led by the Provisional Project Office (PPO). The US led the airborne portion of the CDS and presented a study based on the US RTIP advanced sensor system. In May 99 the CNAD authorized entrance into a 2-year, RTIP-based, project definition phase for interested nations, based on a proposal by Norway. This project definition effort was named the NATO Trans Atlantic Advanced Radar (NATAR) project and was formally designated a NATO Project. Participating nations are: US, Canada, Norway, Denmark, Luxembourg and Belgium. In Aug 99 USD/AT&L directed the Air Force to be lead service, with support of the Army, in carrying out overall US participation in this project and to be specifically responsible for the Air Segment. The Air Force's most significant contribution to NATAR is through participation in a Project Definition Office (PDO) in Brussels, BE. After signature of the multi-national MOU in Oct 00, the PDO began its two-year effort to prepare an international agreement, a program charter, and a request for proposal for a fully integrated and interoperable NATO owned and operated airborne ground surveillance system. FY01 funds will support both U.S. unique efforts to support the program as well as a NATO Call for Funds to support the multi-national PDO, for efforts through FY02. On 18 Sep 01, NATO Secretary General Lord Robertson convened a Reinforced North Atlantic Council to determine a way forward for NATO AGS. As an outcome of this high-level council, the AGS Steering Committee was directed to establish an Enhanced Staff Support (ESS) organization to define a consensus AGS solution. The USAF has not requested funds for FY02 or FY03 pending a NATO program decision..

- (U) FY 2001 (\$ in Thousands)
- (U) \$4,640                      Project Definition Office (PDO) support and support for NATO interoperability studies and efforts
- (U) \$4,640                      Total

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>1001018F NATO AGS</b>	<b>PROJECT</b> <b>0002</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b>          This program is in Budget Activity 7, Operational System Development because it involves the modification of radar sensor technology currently fielded.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></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>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">3,270</td> <td></td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">3,270</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 style="text-align: center;">-7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-100</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 style="text-align: center;">1,500</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-23</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">4,640</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> None</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	3,270			TBD	(U) Appropriated Value	3,270				(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-7				b. Small Business Innovative Research	-100				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	1,500				e. Rescissions	-23				(U) Adjustments to Budget Years Since FY 2002 PBR		0			(U) Current Budget Submit/FY 2003 PBR	4,640	0		TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	3,270			TBD																																																					
(U) Appropriated Value	3,270																																																								
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a. Congressional/General Reductions	-7																																																								
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d. Below Threshold Reprogram	1,500																																																								
e. Rescissions	-23																																																								
(U) Adjustments to Budget Years Since FY 2002 PBR		0																																																							
(U) Current Budget Submit/FY 2003 PBR	4,640	0		TBD																																																					
Project 0002	Page 2 of 5 Pages	Exhibit R-2 (PE 1001018F)																																																							

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>1001018F NATO AGS</b>			PROJECT <b>0002</b>		
<b>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
N/A									
<b>(U) <u>E. Acquisition Strategy</u></b>									
The U.S. and five other NATO nations (Canada, Belgium, Denmark, Norway, and Luxembourg) are participating in a Project Definition effort for a NATO owned and operated ground surveillance capability, based on the U.S. Multi-Platform Radar Technology Insertion Program (MP-RTIP) advanced radar. The Project Definition work is expected to conclude in 2002, and is expected to produce documentation to be presented to NATO nations necessary for a decision on whether to proceed with acquisition of an airborne ground surveillance system based on this effort. This documentation will include an acquisition strategy for the NATAR project reflected in the recommended Request For Proposal.									
<b>(U) <u>F. Schedule Profile</u></b>									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) International Agreement (MOU) Signed			*						
(U) Program Charter Prepared								X	
(U) Request for Proposal (RFP) Prepared								X	
* - Denotes Completed Event									
X- Denotes Planned Event									
Project 0002			Page 3 of 5 Pages			Exhibit R-2 (PE 1001018F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>1001018F NATO AGS</b>			<b>0002</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	NATO Studies					0				
(U)	Other Government Costs									
(U)	Provisional Project Office Support									
(U)	Project Definition Office Support and NATO Interoperability studies and efforts					4,640				
(U)	Total					4,640				
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Northrop Grumman	IDIQ	Apr 96	2,376	2,376	2,376					2,376
Rome Labs	Fixed Price	Sep 96	485	485	485					485
Northrop Grumman	IDIQ	Jan 97	3,782	3,782	3,782					3,782
Northrop Grumman	IDIQ	Dec 97	637	637	637					637
Northrop Grumman	IDIQ	May 98	944	944	944					944
Northrop Grumman	IDIQ	Sep 98	1,404	1,404	1,404					1,404
Northrop Grumman	IDIQ	Dec 98	47	47	47					47
Northrop Grumman	IDIQ	May 99	520	520	520					520
Northrop Grumman	IDIQ	Feb 01								
Project Development Office					477	4,640			Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002				
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>			<b>1001018F NATO AGS</b>			<b>0002</b>			
<b>(U) <u>Performing Organizations Continued:</u></b>									
<u>Support and Management Organizations</u>									
ESC (Provisional Project Office)			24					0	24
MITRE			3,075					0	3,075
TEMS			2,592					0	2,592
Miscellaneous			900					0	900
<u>Test and Evaluation Organizations</u>									
<b>(U) <u>Government Furnished Property:</u></b>									
<u>Contract</u>									
<u>Item</u>	<u>Method/Type</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>or Funding</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</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>									
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				10,672	4,640			TBD	TBD
Subtotal Support and Management				6,591				0	6,591
Subtotal Test and Evaluation									
Total Project				17,263	4,640			TBD	TBD

1. COMPONENT AIR FORCE	FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION ARNOLD AIR FORCE BASE, TENNESSEE			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 65807	6. CATEGORY CODE 319-995	7. PROJECT NUMBER ANZY009110	8. PROJECT COST (\$000) EEIC 529 290		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
SL2/SL3 SUPPORT BUILDING		LS			290.0
SUPPORTING FACILITIES					0.0
SUBTOTAL					290.0
PROFIT AND OVERHEAD ( 0 %)					0.0
TOTAL FUNDED COST					290.0
UNFUNDED COST ( 0 %)					0.0
TOTAL REQUEST					290.0
10. Description of Proposed Construction: Construct support building					
11. Requirement: As required.					
<u>PROJECT:</u> Construct SL2/SL3 support building. (Minor Construction using FY02 RDT&E funds)					
<u>REQUIREMENT:</u> A support building is required to assemble turbine engines and associated test articles and instrumentation in preparation for testing and to provide a staging area for additional test hardware required to support configuration changes.					
<u>CURRENT SITUATION:</u> Build up of test components and instrumentation is currently accomplished in the adjacent test cell, if available, or in the test cell itself. Test cell usage is higher than originally planned and is supporting additional test programs that were not part of the original test mission. Use of the existing test cells for staging and configuration reduce the time available for testing below what is needed to support the total test mission.					
<u>IMPACT IF NOT PROVIDED:</u> Test cells will continue to be used for prep, installation and configuration changes and availability of the test cells for testing will not support mission requirements					

1. COMPONENT AIR FORCE	FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION BROOKS AIR FORCE BASE, TEXAS			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000	
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 310-925	7. PROJECT NUMBER CNBC020049	8. PROJECT COST (\$000) EEIC 529 187.40	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
ADD TO C3STARS TEST FACILITY	SM	111	600	66.6
SUPPORTING FACILITIES				77.0
UTILITIES	LS			( 31.0)
COMMUNICATIONS FIBER OPTICS	LS			( 19.0)
FIRE SPRINKLER SYSTEM	LS			( 17.0)
SITE IMPROVEMENTS	LS			( 10.0)
SUBTOTAL				143.6
SUPERVISION, INSPECTION, AND OVERHEAD ( 10%)				14.4
PROFIT AND OVERHEAD ( 20.5 %)				29.4
TOTAL FUNDED COST				187.4
UNFUNDED COST ( 0 %)				0.0
TOTAL REQUEST				187.4
10. Description of Proposed Construction: Construct an addition to building 170. Provide all utilities, fire sprinkler system, and site improvements to support the new construction. Provide all requirements for new communications and fiber optics to support the mission. Air Conditioning: 15 KW.				
11. Requirement: As required. <u>PROJECT:</u> Add to C3STARS test facility. (Minor Construction using FY02 RDT&E funds) <u>REQUIREMENT:</u> Additional lab space is required to co-locate all HEAI resources into building 170 and support the on-going research projects conducted by AFRL/HEAI. Work has begun to develop a lab that will allow research on team performance in a Combined Air Operations Center. Although the configuration is not fully defined at this point, conservatively, it will require up to 20 consoles to create this laboratory. The expansion of the C3STARS facility will provide adequate laboratory space and office space for HEAI scientists and support staff. <u>CURRENT SITUATION:</u> In 1999 the Training Lab was moved from Lackland AFB to Building 125 at Brooks AFB and renamed the Command & Control Training Research Laboratory (C2TR). Ideally, it would have been located with the existing AFRL/HEAI work in Building 170, which would have enhanced collaboration, reduced duplication of required equipment and improved overall performance of the group. However, due to insufficient space, the lab was put in Building 125. Now Building 125 will be turned over to the City of San Antonio and the lab needs to be moved to Building 170. <u>IMPACT IF NOT PROVIDED:</u> If this project is not approved, AFRL/HEAI will continue to be seperated from other like functions. This will cause duplication of lab equipment, ineffective coordination of reasearch data, and may influence the success or failure of near-term and future research.				

1. COMPONENT AIR FORCE	FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION EDWARDS AIR FORCE BASE, CALIFORNIA			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 65876	6. CATEGORY CODE 319-441	7. PROJECT NUMBER FSPM012523	8. PROJECT COST (\$000) EEIC 529 15		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
INSTALL POWER OUTLET CONNECTORS B 275		LS			15.0
SUPPORTING FACILITIES					0.0
SUBTOTAL					15.0
PROFIT AND OVERHEAD ( 0 %)					0.0
TOTAL FUNDED COST					15.0
UNFUNDED COST ( 0 %)					0.0
TOTAL REQUEST					15.0
10. Description of Proposed Construction: Install 3 new power output connectors at B275. Connectors must be 3 phase, 280 VAC, 60 Amps.					
11. Requirement: As required. <u>PROJECT:</u> Install new power output connectors at B275. (Minor Construction using FY01 RDT&E funds) <u>REQUIREMENT:</u> Power output connectors are required at B275 to power up the telemetry antenna pedestal to support F-22 testing. <u>CURRENT SITUATION:</u> The F-22 avionics van is currently under refurbishment, and is unable to provide the telemetry support required by the F-22 program. <u>IMPACT IF NOT PROVIDED:</u> Testing of the F-22 will be delayed because required telemetry data cannot be collected.					



1. COMPONENT AIR FORCE	FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION EDWARDS AIR FORCE BASE, CALIFORNIA			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 65876	6. CATEGORY CODE 872-247	7. PROJECT NUMBER FSPM012531	8. PROJECT COST (\$000) EEIC 529 50		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
CONSTRUCT SECURITY FENCE FOR F-22 AT B1864		LS			50.0
SUPPORTING FACILITIES					0.0
SUBTOTAL					50.0
PROFIT AND OVERHEAD ( 0 %)					0.0
TOTAL FUNDED COST					50.0
UNFUNDED COST ( 0 %)					0.0
TOTAL REQUEST					50.0
10. Description of Proposed Construction: Install 6' chain link fence around B1864 to include (two ea) double gate openings and (one ea) 4' personnel gate. Provide 3-strand barbed-wire angled topper on top of fence for the entire perimeter.					
11. Requirement: As required. <u>PROJECT:</u> Construct security fence for F-22 at Building 1864. (Minor Construction using FY01 RDT&E funds) <u>REQUIREMENT:</u> A 6' chain link fence is required around B1864 to meet the F-22 security requirements. <u>CURRENT SITUATION:</u> The F-22 compound is not adequately secured to support the personnel and flight test surges of the F-22 program. <u>IMPACT IF NOT PROVIDED:</u> The F-22 compound will continue to be unable to accommodate personnel and flight test surges, resulting in delays to the test program.					

1. COMPONENT AIR FORCE		FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION EDWARDS AIR FORCE BASE, CALIFORNIA				4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 65876		6. CATEGORY CODE 442-258	7. PROJECT NUMBER FSPM012544		8. PROJECT COST (\$000) EEIC 529 250.09	
9. COST ESTIMATES						
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)	
CONSTRUCT LOX CART MAINTENANCE FACILITY		SM	164	1,066	174.8	
SUPPORTING FACILITIES					60.0	
UTILITIES		LS			( 30.0)	
RELOCATE CLEAN ROOM		LS			( 30.0)	
SUBTOTAL					234.8	
SUPERVISION, INSPECTION, AND OVERHEAD ( 6.5%)					15.3	
PROFIT AND OVERHEAD ( 0 %)					0.0	
TOTAL FUNDED COST					250.1	
UNFUNDED COST ( 0 %)					0.0	
TOTAL REQUEST					250.1	
10. Description of Proposed Construction: Relocate the LOX cart maintenance function from building 1931, by constructing a new facility on pad 15, and relocating the existing clean room. The new facility will be the same size as the existing facility. Paint hold short lines on pad 15 to prevent aircraft traffic in the area.						
11. Requirement: As required. <u>PROJECT:</u> Construct LOX Cart Maintenance Facility. (Minor Construction using FY01 RDT&E funds) <u>REQUIREMENT:</u> The LOX cart maintenance function with a clean room is required to be located outside the fragmentation zone around the old X-15 test stand to allow simultaneous use of both facilities. <u>CURRENT SITUATION:</u> The existing LOX cart maintenance facility is currently located within the fragmentation zone around the old X-15 test stand. The facility must be vacated during any test stand activities. Additionally, the facility itself would be at risk of serious damage if an accident occurred during testing. <u>IMPACT IF NOT PROVIDED:</u> The LOX cart maintenance facility will remain within the test stand fragmentation zone and will have to be vacated during test stand activities. An accident at the test stand will pose an unacceptable risk to the LOX cart maintenance operations.						

1. COMPONENT AIR FORCE	FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION EGLIN AIR FORCE BASE, FLORIDA			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 65807	6. CATEGORY CODE 315-237	7. PROJECT NUMBER FTFA971041	8. PROJECT COST (\$000) EEIC 529 420		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
CONSTRUCT MUNITIONS TEST FACILITY		LS			420.0
SUPPORTING FACILITIES					0.0
SUBTOTAL					420.0
PROFIT AND OVERHEAD ( 0 %)					0.0
TOTAL FUNDED COST					420.0
UNFUNDED COST ( 0 %)					0.0
TOTAL REQUEST					420.0
10. Description of Proposed Construction: Construct a new munitions test facility to replace the existing temporary trailers					
11. Requirement: As required. <u>PROJECT:</u> Construct Munitions Test Facility. (Minor Construction using FY02 RDT&E funds). <u>REQUIREMENT:</u> A new facility is required to house the non-hands on munitions personnel associated with the munitions test program. <u>CURRENT SITUATION:</u> Personnel have been displaced from Bldg 999 because of explosive safety considerations (live munitions operations are performed in the facility). Personnel are currently being housed in three double-wide trailers. <u>IMPACT IF NOT PROVIDED:</u> Personnel will continued to operates out of temporary facility causing mission delays.					

1. COMPONENT AIR FORCE	FY 2002 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE	
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO			4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 62605	6. CATEGORY CODE 610-287	7. PROJECT NUMBER MHMV009736	8. PROJECT COST (\$000) EEIC 529 478		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
CONSTRUCT SCIF AREA, BUILDING 497		LS			478.0
SUPPORTING FACILITIES					0.0
UTILITIES		LS			( 0.0)
PAVEMENTS		LS			( 0.0)
SITE IMPROVEMENTS		LS			( 0.0)
SUBTOTAL					478.0
PROFIT AND OVERHEAD ( 0 %)					0.0
TOTAL FUNDED COST					478.0
UNFUNDED COST ( 0 %)					0.0
TOTAL REQUEST					478.0
10. Description of Proposed Construction: Construct Sensitive Compartmented Information Facilities (SCIF) in building 497					
11. Requirement: As required. <u>PROJECT:</u> Construct SCIF Area, Building 497. (Minor Construction using FY02 RDT&E funds) <u>REQUIREMENT:</u> Additional SCIF space is required to support the DE Headquarters and the DE Satellite Assessment Center. <u>CURRENT SITUATION:</u> Adequate SCIF space is not available <u>IMPACT IF NOT PROVIDED:</u> Some classified work may be delayed or executed in a shared SCIF					

1. COMPONENT AIR FORCE	FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION KIRTLAND AIR FORCE BASE, NEW MEXICO		4. PROJECT TITLE MINOR CONSTRUCTION < \$500,000		
5. PROGRAM ELEMENT 62202	6. CATEGORY CODE 312-477	7. PROJECT NUMBER MHMV011664	8. PROJECT COST (\$000) EEIC 529 275	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
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 FY01 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.				

1. COMPONENT AIR FORCE		FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE		
3. INSTALLATION AND LOCATION WRIGHT PATTERSON AIR FORCE BASE, OHIO				4. PROJECT TITLE MINOR CONSTRUCTION < \$1,000,000			
5. PROGRAM ELEMENT 62201		6. CATEGORY CODE 311-171	7. PROJECT NUMBER ZHTV010014		8. PROJECT COST (\$000) EEIC 529 715		
9. COST ESTIMATES							
ITEM				U/M	QUANTITY	UNIT COST	COST (\$000)
CONSTRUCT ENCLOSED BRIDGEWAY				LS			715.0
SUPPORTING FACILITIES							0.0
SUBTOTAL							715.0
PROFIT AND OVERHEAD ( 0 %)							0.0
TOTAL FUNDED COST							715.0
UNFUNDED COST ( 0 %)							0.0
TOTAL REQUEST							715.0
10. Description of Proposed Construction: Construct an elevated, environmentally controlled, enclosed bridge connection from Building 20145 to Building 20045. Work includes demolition, excavation, foundation work, structural steel supports and framing, concrete, glazing, roof, interior and exterior finishes, doors, and HVAC and electrical work. Reconfigure existing facilities to accept walkway approaches.							
11. Requirement: As required.							
<u>PROJECT:</u> Construct enclosed bridgeway. (Minor Construction using FY01 RDT&E funds)							
<u>REQUIREMENT:</u> The enclosed walkway is required to provide a year round weather protected link between the three facilities of the VA complex to allow the transfer of research materials, equipment, and staff between the buildings and improve force protection conditions. This project is needed to eliminate the risk of environmental exposure and damage during transport to sensitive research computers and equipment and eliminate the need to provide duplicate work areas if the state of the art research equipment cannot be protected. Protected access is also required to improve the synergistic effects of increased collaboration between researchers located in these facilities and allow single point access for force protection.							
<u>CURRENT SITUATION:</u> AFRL/VA has consolidated their human resources and laboratories within buildings 20045, 20145, and 20146 referred to as the VA complex. The current physical disconnect between the buildings prevents the vital individual and project team collaboration necessary to provide the synergy required for efficient and comprehensive research and development (R&D), resulting in degraded support to the warfighter. The maintenance of most of the computer equipment and state-of-the-art research equipment located in buildings 20145 and 20146 are managed, controlled and repaired by operations in Building 20045. The number of scientific workstations used by researchers has grown substantially the last several years and will continue to increase. These workstations are sensitive to environmental conditions, are vulnerable to failure if not carefully handled, and must be kept in environmentally controlled conditions to ensure proper operation. Thousands of dollars of this equipment are at risk when transported up and down Eighth Street on a daily basis. Any damage during transport leads to R&D downtime. Transfer of research materials and equipment between Buildings 20045 and 20145 in inclement weather is impossible. AFRL/VA is developing two common use functions to facilitate collaborative R&D within the VA complex. An immersion room in Building 20146 and an area for program management of R&D special access programs (SAP) in Building 20045 will be used by all of the computationally intensive research activities, regardless of where the research is accomplished. These functions will generate additional equipment and personnel traffic across the VA complex. Currently there is no single point access during force protection conditions. This duplication of entry point manpower is costing AFRL over \$1,000 per day in lost productivity.							
<u>IMPACT IF NOT PROVIDED:</u> Inefficient movement of analysis hardware from 20045 to areas in 20145 will lead to delays in testing schedules. Lack of a convenient							

1. COMPONENT AIR FORCE	FY 2001 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION WRIGHT PATTERSON AIR FORCE BASE, OHIO		4. PROJECT TITLE MINOR CONSTRUCTION < \$1,000,000	
5. PROGRAM ELEMENT 62201	6. CATEGORY CODE 311-171	7. PROJECT NUMBER ZHTV010014	8. PROJECT COST (\$000) EEIC 529 715
<p>connection between facilities will inhibit collaborative R&amp;D and force the duplication of over \$900,000 in specialized research equipment and construction. Loss of engineering productivity during times of high force protection will continue. VA's capability to accomplish their R&amp;D mission will be adversely impacted with potential delays to the development of new weapons systems.</p> <p><u>ADDITIONAL:</u> Air Force Under Secretary of Defense letter dated 28 Jul 99; subject "Modification of the DoD Laboratory Revitalization Demonstration Program" allows commanders of selected defense laboratories greater flexibility in undertaking facility modernization initiatives by increasing the maximum dollar threshold applicable to minor construction projects. The legislation raises the threshold for minor military construction for the laboratories included in the program. Facilities and structures constructed under this authority should be in direct support of research, development, test, and evaluation at the designated laboratories. AFRL has been designated as eligible for this program.</p>			