

**UNCLASSIFIED**

**DEPARTMENT OF THE AIR FORCE**

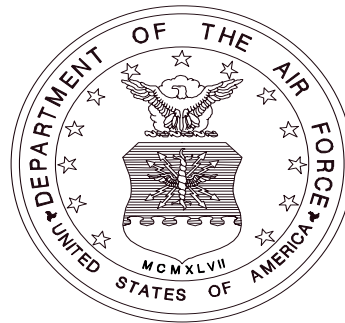
**FISCAL YEAR (FY) 2004/2005 BIENNIAL BUDGET ESTIMATES**

**RESEARCH, DEVELOPMENT, TEST AND EVALUATION (RDT&E)**

**DESCRIPTIVE SUMMARIES, VOLUME III**

**BUDGET ACTIVITY 7**

**FEBRUARY 2003**



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**Fiscal Year 2004/2005 Biennial Budget Estimates  
RDT&E Descriptive Summaries, Volume III  
Budget Activity 7  
February 2003**

**INTRODUCTION AND EXPLANATION OF CONTENTS**

1. (U) GENERAL

A. This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT&E) program elements and projects in the FY 2004 President's Budget.

7) All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2B, Chapter 5, Section 050402. Exceptions:

- a) Exhibit R-1, RDT&E Program, which was distributed under a separate cover due to classification.
- b) Exhibit R-4/4a, RDT&E Program Schedule Profile/Detail, the USAF could not modify its documentation preparation software in time to include the new R-4/4a exhibit in this submission. The previous schedule profile is presented in this submission in order to provide the data now required by the R-4/4a exhibit.

8) All exhibit formats in this document are in accordance with guidelines prescribed in DoD 7000.14R, Financial Management Regulation, Volume 2B, Chapter 5, Section 050402. Exceptions:

- a) Exhibits R-2/2a, RDT&E Budget Item Justification/Project Justification, the USAF could not modify its documentation preparation software in time to include the revised R-2/2a exhibit format in this submission, however, all required information is provided within the previous R-2/2a format.
- b) Exhibit R-3, RDT&E Project Cost Analysis, the USAF could not support the R-3 format matrix because it does not track programs in the manner required to complete the revised exhibit, however, all required information is provided within the previous R-3 format.

9) Other comments on exhibit contents in this document:

- a) Funding (\$) is presented in the previous cost table format using thousands as the smallest increment. (e.g. \$1,000 = 0.001)
- b) Exhibits R-2/2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2004 RDT&E program with the exception of classified program elements. The formats and contents of this document are in accordance with the guidelines and requirements of the Congressional committees insofar as possible.
- c) The "Other Program Funding Summary" portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.
- d) "Facilities Exhibits", Military Construction Project Data, (DD 1391), for improvements to and construction of government-owned facilities funded in RD&E, are included at the end of Volume III.

2. (U) CLASSIFICATION

A. All exhibits contained in Volumes I, II, and III are unclassified. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

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<b>Program Element Title</b>	<b>PE</b>	<b>PAGE</b>
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USAF Modeling and Simulation	0207601F	1,409
Warfighter Rapid Acquisition Program	0203761F	1,213
Wargaming and Simulation Centers	0207605F	1,429
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Wideband MILSATCOM (Space)	0603854F	643
WWMCCS/GLOBAL COMMAND & CONTROL SYSTEM	0303150F	1,553

**PROGRAM ELEMENT COMPARISON SUMMARY**

<b>PROGRAM ELEMENT (By BUDGET ACTIVITY)</b>		<b>REMARKS</b>
<b>BUDGET ACTIVITY #1: BASIC RESEARCH (Volume I)</b>		
<b>0601103F</b>	<b>University Research Initiatives</b>	<p>In FY 2004, this is a new PE.</p> <p>Project 5094, University Research Initiatives, efforts were transferred from the Office of the Secretary of Defense (OSD).</p>
<b>0601108F</b>	<b>High Energy Laser Research Initiatives</b>	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project 5097, High Energy Laser Research Initiatives, efforts were transferred from OSD.</p>
<b>BUDGET ACTIVITY #2: APPLIED RESEARCH (Volume I)</b>		
<b>0602102F</b>	<b>Materials</b>	<p>In FY 2004, Project 2015, Rocket Materials Technology, efforts transferred to PE 0602500F, Multi-Disciplinary Space Technologies, Project 5025, Space Materials Development, as a result of the Space Commission recommendation to consolidate all space unique activities.</p>
<b>0602203F</b>	<b>Aerospace Propulsion</b>	<p>In FY 2004, Project 4847, Rocket Propulsion Technologies, efforts were transferred to PE 0602500F, Multi-Disciplinary Space Technologies, Project 5026, Rocket Propulsion Component Technologies, in conjunction with the Space Commission recommendation to consolidate all space unique activities.</p>
<b>0602204F</b>	<b>Aerospace Sensors</b>	<p>In FY 2004, Project 4916, Electromagnetic Technologies, efforts were transferred to PE 0602500F, Multi-Disciplinary Space Technologies, Project 5026, Rocket Propulsion Component Technologies, as a result of the Space Committee recommendation to consolidate all space unique activities.</p>
<b>0602500F</b>	<b>Multi-Disciplinary Space Technologies</b>	<p>In FY 2004, efforts in Projects 5024, Human Centered Applied Space Technologies, were terminated. .</p> <p>In FY 2004, space antenna efforts in PE 0602204F, Aerospace Sensors, Project 4916, Electromagnetic Technologies, were transferred to Project 5025, Rocket Propulsion Component Technologies, as a result of the Space Commission recommendation to consolidate all space unique activities.</p> <p>In FY 2004, efforts in Project 5024, Human Centered Applied Space Technologies, were terminated due to restructuring of the Science and Technology Program.</p>

In FY 2004, Project 5026, Rocket Propulsion Component Technologies, efforts transferred from PE 0602203F, Aerospace Propulsion, Project 4847, Rocket Propulsion Technologies, into this project in conjunction with the Space Commission recommendation to consolidate all space unique activities.

In FY 2004, Project 5026, Rocket Propulsion Component Technologies, efforts were transferred from PE 0602102F, Materials, Project 5015, Rocket Materials Technology, as a result of the Space Commission recommendation to consolidate all space unique activities.

0602890F High Energy Laser Research

In FY 2004, this is a new PE.

In FY 2004, Project 5096, High Energy Laser Research, efforts were transferred from OSD.

**BUDGET ACTIVITY #3: ADVANCED TECHNOLOGY DEVELOPMENT (Volume I)**

0401840F AMC Command & Control System

In FY 2004, this is a new PE.

In FY 2004, Project 5119, Agile Transportation 2001, efforts were transferred from OSD.

0603211F Aerospace Technology Development & Demonstration

In FY 2004, Project 5099, National Aerospace Initiatives, includes new start efforts.

0603216F Aerospace Propulsion and Power Technology

In FY 2004, Project 5098, Advanced Aerospace Initiatives, includes new start efforts.

0603311F Ballistic Missile Technologies

In FY 2004, Project 4091, Missile Electronics, efforts were transferred to PE 0603401F, Advanced Spacecraft Technology, Project 5083, Ballistic Missile Technologies, in order to align projects within the Air Force Research Laboratory organization.

0603401F Advanced Spacecraft Technology

In FY 2004, Project 5083, Ballistic Missile Technologies, efforts were transferred from PE 0603311F, Ballistic Missile Technology, Project 4091, Missile Electronics, in order to align projects within the Air Force Research Laboratory organization.

0603755F High Performance Computing Modernization Program

In FY 2004, this is a new PE.

In FY 2004, Project 5093, High Performance Computing Modernization Program, efforts were transferred from OSD.

0603924F High Energy Laser Advanced Technology Program

In FY 2004, this is a new PE.

In FY 2004, Project 5095, High Energy Laser Advanced Technology Program, efforts were transferred from OSD.

0804757F Joint National Training Center

In FY 2004, this is a new PE.

In FY 2004, Project 5124, Training Transformation, efforts were transferred from OSD.

**BUDGET ACTIVITY #4: ADVANCED COMPONENT DEVELOPMENT & PROTOTYPE (Volume II)**

0603287F	Physical Security Equipment	In FY 2004, this is a new PE.  In FY 2004, Project 5121, Physical Security Equipment, efforts were transferred from OSD.
0603430F	Advanced EHF Milsatcom (Space)	In FY 2004, Project 4050, Advanced MILSATCOM, efforts were transferred to PE 0303601F, MILSATCOM Terminals, Project , in order to align the engineering support efforts with the funding element.
0603438F	Space Control Technology	In FY 2004, Project A007, Space Range, efforts were transferred from Project 2611, Technology Insertion and Planning Analysis, in order to realign activities.  In FY 2004, Project 2611, Technology Insertion Planning and Analysis, efforts were transferred to Project A007, Space Range, in order to realign activities.
0603790F	NATO Cooperative R&D	In FY 2004, Project NATO, NATO Cooperative R&D, includes new start efforts.
0603791F	International Space Cooperative R&D	In FY 2004, Project 5035, International Cooperative Space R&D, includes new start efforts.
0603851F	ICBM - Demonstration & Validation	In FY 2004, Project 4209, Long Range Planning, includes a new start efforts.
0603854F	Wideband MILSATCOM (Space)	In FY 2004, Project 4944, Advanced Wideband System, efforts were transferred to PE 0303601F, MILSATCOM Terminals, Project 2487, MILSATCOM Terminals, in order to properly align funding.
0603856F	Air Force/National Program Cooperation	In FY2004, Project 4782, Air Force/National Program Cooperation (AFNPC), efforts were transferred to PE 0604441F, Space Based Infrared Systems (SBIRS) High EMD, Project 3616, SBIRS High Element EMD, in order to consolidate all SBIRS development efforts.
0604435F	Interim Polar	In FY 2004, this is a new PE.  In FY 2004, Project A010, Advanced Polar System, includes new start efforts.
0604855F	Operationally Responsive Launch	In FY 2004, this is a new PE.  In FY 2004, Project A013, Operationally Responsive Launch, includes new start efforts.
0604856F	Common Aero Vehicle	In FY 2004, this is a new PE.  In FY 2004, Project A012, Common Aero Vehicle, includes new start efforts.

**BUDGET ACTIVITY #5: SYSTEM DEVELOPMENT & ENGINEERING DEVELOPMENT (Volume II)**

0207256F	UCAV Joint Program Office	In FY 2004, this is a new PE.  In FY 2004, Project 5118, UCAV Joint Program Office, includes new start efforts.
0305176F	Combat Survivor Evader Locator	In FY 2004 Project 4522, CSAR EMD, will be completed.
0604226F	B-1B	In FY 2004, Project 4596, Conventional Mission Upgrades, includes new start efforts.  In FY 2004, Project 4596, Conventional Mission Upgrades, efforts were transferred to PE 0207446F, Bomber Tactical Data Link, Project 4596, Bomber Tactical Data Link.
0604240F	B-2 Advanced Technology Bomber	In FY 2004, Project 3843, B-2 Advanced Technology Bomber, efforts were transferred to PE 0207446F, Bomber Tactical Data Link, Project 5041, Bomber Tactical Data Link.
0604270F	EW Development	In FY 2004, Project 3945, RF Towed Decoy Systems, was changed to TEWS Upgrade, to reflect restructuring of the EW program.  In FY 2004, Project 8462, MALD, was changed to Airborne Electronic Attack, to reflect restructuring of the EW program.
0604287F	Physical Security Equipment	In FY 2004, this is a new PE.  Project 5120, Physical Security Equipment SD&DD, efforts were transferred from OSD.
0604441F	Counterspace Systems	In FY2004, Project 4782, Air Force/National Program Cooperation (AFNPC) SBIRS Technical Intelligence (TI) efforts were transferred from PE 0603856F, Air Force/National Program Cooperation, Project 4782, Air Force/National Program Cooperation, in order to consolidate all SBIRS development efforts.
0604617F	Agile Combat Support	In FY 2004, Project 2895, Civil Engineering Readiness, includes new start efforts.
0604735F	Combat Training Ranges	In FY 2004, Project 2286, Combat Training Range Equipment, includes new start efforts.
0604851F	ICBM - Engineering, Manufacturing & Development	In 2004, Project 5080, ICBM Security, is a new start effort.
0604853F	Evolved Expendable Launch Vehicle - EMD	In FY 2004, Project 0004, Evolved Expendable Launch Vehicle, includes new start efforts.

**BUDGET ACTIVITY #6: MANAGEMENT & SUPPORT (Volume II)**

0604759F	Major T&E Investment	In FY 2004, Project 4597, Air Force Test Investments, includes new start efforts.
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0605807F	Test & Evaluation Support	<p>In FY 2004, Project 06TS, T&amp;E Support, efforts transferred to PE 0605976F, Facility Restoration &amp; Modernization - T&amp;E, Project 06MC, Facility Restoration &amp; Modernization - T&amp;E.</p> <p>In FY 2004, Project 06TS, T&amp;E Support, efforts transferred to PE 0605978F, Facility Sustainment - T&amp;E Support, Project 06MR, Facility Sustainment - T&amp;E Support.</p>
0605976F	Facility Restoration & Modernization - T&E	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project 06MC, Facility Restoration &amp; Modernization - T&amp;E, efforts were transferred from PE 0605807F, Test &amp; Evaluation Support, Project 06TS, T&amp;E Support.</p>
0605978F	Facility Sustainment - T&E Support	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project 06MR, Facility Sustainment - T&amp;E Support, efforts were transferred from PE 0605807F, Test &amp; Evaluation Support, Project 06TS, T&amp;E Support.</p>
0804731F	General Skills Training	<p>In FY 2004, Project 4980, Research and Development of Computer Forensic Analyst Tools, includes new start efforts.</p>
<b>BUDGET ACTIVITY #7: OPERATIONAL SYSTEMS DEVELOPMENT (Volume III)</b>		
0101113F	B-52 Squadrons	<p>In FY 2004, Project 4810, Avionics Midlife Improvement, efforts were transferred to PE 0207446F, Bomber Tactical Data Link.</p>
0101120F	Advanced Cruise Missile	<p>In FY 2003, Project 4798, Life Extension Study, was changed to Life Extension Program.</p> <p>In FY 2004, Project 4797, Flight Testing &amp; Navigation Enhancement, includes new start efforts.</p> <p>In FY 2004, Project 4798, Life Extension Program, includes new start efforts.</p>
0207134F	F-15E Squadrons	<p>In FY 2004, Project 0131, Initial Operational Test &amp; Evaluation, includes new start efforts.</p>
0207138F	F-22 Squadrons	<p>In FY 2004, Project 4785, F-22, includes new start efforts.</p>
0207141F	F-117A Squadron	<p>In FY 2004, Project 3956, F-117A Stealth Fighter, includes new start efforts.</p>
0207417F	AWACS	<p>In FY 2004, Project 411L, AWACS, efforts were transferred to PE 0207448F, C2ISR Tactical Data Link, Project 5045, C2ISR Tactical Data Link.</p>
0207446F	Bomber Tactical Data Link	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project 5041, Bomber Tactical Data Link, efforts were transferred from PE 0101113F, B-52 Squadrons, Project 4810, Avionics Midlife Improvement.</p>

In FY 2004, Project 5041, Bomber Tactical Data Link, efforts were transferred from PE 0604226F, B-1B, Project 4596, Conventional Mission Upgrades.

In FY 2004, Project 5041, Bomber Tactical Data Link, efforts were transferred from PE 0604240F, B-2 Advanced Technology Bomber, Project 3843, B-2 Advanced Technology Bomber.

0207448F	C2ISR Tactical Data Link	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project 5045, C2ISR Tactical Data Link, efforts were transferred from PE 0207417F, AWACS, Project 411L, AWACS.</p> <p>In FY 2004, Project 5045, C2ISR Tactical Data Link, efforts were transferred from PE 0207581F, JSTARS, Project 0003, JSTARS.</p>
0207581F	JSTARS	<p>In FY 2004, Project 0003, JSTARS, efforts were transferred to PE 0207448F, C2ISR Tactical Data Link, Project 5045, C2ISR Tactical Data Link.</p>
0207601F	USAF Modeling & Simulation	<p>In FY 2004, Project 4567, Joint Modeling and Simulation System, includes new start efforts.</p> <p>In FY 2004, Project 5122, C4ISR Warfighting Integration, includes new start efforts.</p>
0303131F	Minimum Essential Emergency Communications Network	<p>In FY 2004, project 5047, Ground Element MEECN System (GEMS), includes new start efforts.</p>
0303140F	Information Systems Security Program	<p>In FY 2004, Project 4861, Cryptologic 2000, efforts were transferred from PE 030401F, Communications Security, Project 4861.</p>
0303141F	Global Combat Support System (GCSS)	<p>In FY 2004, Project Number 4928, Electronic Business/Electronic Commerce (EB/EC), efforts were transferred to PE 0303200F, Air Force CIO Ops and Support.</p>
0303401F	Communications Security	<p>In FY 2004, Project 4861, Cryptologic 2000, efforts were transferred to PE 33140F, Information Systems Security Program, Project 4861, Cryptologic 2000.</p>
0303601F	MILSATCOM Terminals	<p>In FY 2004, Project 2487, MILSATCOM Terminals, efforts were transferred from PE 0603854F, Wideband MILSATCOM (Space), Project 4944, Advanced Wideband System, in order to properly align funding.</p>
0305160F	Defense Meteorological Satellite Program	<p>In FY2004, Project 04758, DMSP Program, was completed.</p>
0305111F	Weather Service	<p>In FY 2004, Project 2738, Weather Service, includes new start efforts.</p>
0305174F	Space Warfare Center	<p>In FY 2004, this is a new PE.</p> <p>In FY 2004, Project A011, Space Analysis and Application Development, includes new start efforts.</p>

0305207F	Manned Reconnaissance Systems	In FY 2004, Project 4754, Cobra Ball, includes new start efforts.
0305906F	NCMC - TW/AA System	In FY 2004, Project 4806, N/UWSS, changed to CCIC2CS to more correctly depict end-user weapon system capabilities.
0305910F	SPACETRACK	In FY 2004, Project A009, Orbital Deep Space Imager, includes new start efforts.
		In FY 2004, Project , , includes new start efforts due to the Navy Space Surveillance Fence, PE 35927N, being transferred from the Navy to the Air Force.
		Project 5011, Space Situational Awareness Initiatives , efforts were transferred to Project A009, Orbital Deep Space Imager.
		Project A009, Orbital Deep Space Imager, efforts were transferred from Project 5011, Space Situational Awareness Initiatives.
		FY 2004, Project 5011, Space Situational Awareness Initiatives, efforts were transferred to Project A008, Sensor SLEP.
		In FY 2004, Project A008, Sensor SLEP, efforts were transferred from Project 5011, Space Situational Awareness Initiatives.
0305917F	Space Architect	In FY 2004, this is a new PE.
		In FY 2004, Project 4746, National Security Space Architect, efforts were transferred from OSD.
0401134F	Large Aircraft Infra-Red Countermeasures Program (LAIRCM)	In FY 2004, Project 4942, LAIRCM, includes new start efforts.
0708612F	Computer Resources Support Improvement Program (CRSIP)	In FY 2004, Project 4851, Embedded CRSIP, was terminated.
0901212F	Service Wide Support	In FY2004 efforts within Project 5060, Joint Personal Adjudication System, will transfer to OSD due to a newly re-aligned Defense Security Service (DSS) under ASD (C3I)



The following are Program Elements not providing RDT&E exhibits due to classification:

0101815F	Advanced Strategic Programs
0207248F	Special Evaluation Program
0207424F	Evaluation and Analysis Program
0207591F	Advanced Program Evaluation
0208160F	Technical Evaluation System
0208161F	Special Evaluation System
0304311F	Selected Activities
0603801F	Special Programs

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

DATE

**February 2003**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0101113F B-52 SQUADRONS**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	65,025	54,712	28,649	16,633	34,352	71,361	28,500	0	Continuing	TBD
4810 Avionics Midlife Improvement (AMI)	36,608	32,274	28,649	0	0	0	0	0	Continuing	TBD
4875 Situational Awareness Defensive Improvement	28,417	22,438	0	0	0	0	0	0	0	70,925
4876 B-52 Global Air Traffic Management (GATM)	0	0	0	0	0	0	0	0	Continuing	TBD
5039 B-52 Modernization	0	0	0	16,633	34,352	71,361	28,500	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD

**(U) A. Mission Description**

The B-52 is one of two bomber weapon systems which supports conventional and nuclear taskings. It employs the most diverse weapons load and is the only long range bomber weapon system that can employ the Advanced Cruise Missile (ACM), Air Launched Cruise Missile (ALCM) and Conventional Air Launched Cruise Missile (CALCM). The current service life extends beyond 2040. The Avionics Midlife Improvement (AMI) modification replaces unsupportable mission critical parts of the Offensive Avionics System, which controls navigation and weapons delivery. The Situational Awareness Defensive Improvement (SADI) modification provides improved situational awareness and electronic countermeasure system control by increasing memory and through-put, providing in flight reprogramming, and adding a new integrated display. The Global Air Traffic Management (GATM) spiral upgrade will allow the B-52 to meet Federal Aviation Agency and ICAO avionics requirements which will reduce airspace congestion and increase safety. B-52 Modernization upgrade provides communications improvements for enhanced command and control, an in flight CALCM mission planning system, and increased carriage of GPS guided gravity and standoff weapons. Air Force Material Command's Oklahoma Air Logistics Center has program management responsibility. The prime contractor for these projects is Boeing, McDonnell Defense located in Wichita, Kansas.

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

This program is in budget activity 7 - Operational System Development - as it supports an operational system.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
BUDGET ACTIVITY				February 2003
07 - Operational System Development		PE NUMBER AND TITLE		
		0101113F B-52 SQUADRONS		
(U)	<b><u>C. Program Change Summary (\$ in Thousands)</u></b>			
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
				<u>Total Cost</u>
(U)	Previous President's Budget	66,205	55,794	47,157
(U)	Appropriated Value	66,874	55,794	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-669	-590	
	b. Small Business Innovative Research	-2,156		
	c. Omnibus or Other Above Threshold Reprogram		-492	
	d. Below Threshold Reprogram	1,294		
	e. Rescissions	-318		
(U)	Adjustments to Budget Years Since FY 2003 PBR	0		-18,508
(U)	Current Budget Submit/FY 2004 PBR	65,025	54,712	28,649
(U)	<b><u>Significant Program Changes:</u></b>			
	(U) FY04 Adjustments to Budget Years (-18,508): B-52 Modernization Program deferred by one year--originally planned to start in FY 04. Program will now be an FY05 start.			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>					PROJECT <b>4810</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4810	Avionics Midlife Improvement (AMI)	36,608	32,274	28,649	0	0	0	0	0	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>                      The B-52H Offensive Avionics System (OAS) has several subsystems which must be replaced. The Inertial Navigation System (INS) utilizes 1960 unsupported spinning mass gyro technology. The Avionics Control Unit (ACU) is a computer system with limited processing capability and memory. The Data Transfer Unit Cartridges (DTUCs) are bulky, unreliable, and obsolete. The AMI program will use non developmental components and technology to replace these subsystems and their associated software, significantly increasing OAS reliability, maintainability, supportability. Reliability and DMS deficiencies and performance improvements to the OAS are also addressed in this program. Funding is provided for engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics) and for weapon system operation/safety, supportability, maintainability, reliability, and Total Ownership Cost (TOC) improvements.</p> <p>This program is in budget activity 7 - Operational System Development - because it supports a currently operational system.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 Accomplishments/Planned Program                      (U) \$2,196 Prototype Hardware                      (U) \$30,588 Design, development of replacement software                      (U) \$1,639 System Program Office Support                      (U) \$385 Program Support/Modeling and Simulation/Studies and Analysis                      (U) \$1,800 Ground and Flight Test                      (U) \$36,608 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0 Accomplishments/Planned Program                      (U) \$4,253 Prototype Hardware                      (U) \$19,619 Design, development of replacement software                      (U) \$7,350 Ground and Flight Test                      (U) \$892 System Program Office Support                      (U) \$160 Program Support/Modeling and Simulation/Studies and Analysis                      (U) \$32,274 Total</p>											
Project 4810			Page 3 of 12 Pages				Exhibit R-2A (PE 0101113F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>					<b>0101113F B-52 SQUADRONS</b>					<b>4810</b>	
<b>(U) <u>A. Mission Description Continued</u></b>											
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>											
(U)	\$0	Accomplishments/Planned Program									
(U)	\$0	Prototype Hardware									
(U)	\$11,875	Ground and Flight Test									
(U)	\$638	System Program Office Support									
(U)	\$16,136	Design, development of replacement software									
(U)	\$28,649	Total									
<b>(U) <u>B. Project Change Summary</u></b>											
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>											
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	AF RDT&E	36,608	32,274	28,649					Continuing	Continuing	
(U)	Other APPN										
(U)	Aircraft Procurement (BP1100)	0	0	18,611	37,178	36,587	5,591	818	Continuing	Continuing	
<b>(U) <u>D. Acquisition Strategy</u></b>											
The AMI program will contract with Boeing Wichita for aircraft hardware integration and Flight Management System and the Stores Management Overlay software development. Boeing will work with select vendors which will provide EMD hardware. The Government will subsequently contract with these vendors for production hardware supporting aircraft installations.											
<b>(U) <u>E. Schedule Profile</u></b>											
		<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>					
		1	2	3	4	1	2	3	4	1	
		2	3	4	1	2	3	4	1	2	
(U)	Contract Award/Modifications	*				*				X	
(U)	Interface Development										
(U)	Software Development	*	*	*	*	*	X	X	X		
(U)	Test Planning	*	*	*	*	*	X	X	X		
(U)	Group A Design										
Project 4810					Page 4 of 12 Pages					Exhibit R-2A (PE 0101113F)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0101113F B-52 SQUADRONS</b>					<b>4810</b>			
<b>(U) E. Schedule Profile Continued</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Group A Fabrication	*	*	*									
(U)	Trial Install		*	*	*								
(U)	Ground & Flight Test			*	*	*	X	X	X	X	X	X	X
(U)	Milestone III Decision								X				
	* = Complete												
	X = On going												
	Note: Profiles with quarterly decision points reflect administration modifications and incremental work.												
Project 4810					Page 5 of 12 Pages				Exhibit R-2A (PE 0101113F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101113F B-52 SQUADRONS			PROJECT 4810		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Prototype Hardware					2,196		4,253		
(U)	Non-recurring Engineering					30,588		19,619		16,136
(U)	Ground/Flight Test					1,800		7,350		11,875
(U)	System Program Office Support					1,639		892		638
(U)	Miscellaneous					385		160		0
(U)	Total					36,608		32,274		28,649
(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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing, Wichita	CONTRACT	FY01	109,100	109,100	26,670	30,588	19,619	9,776	Continuing	TBD
<u>Support and Management Organizations</u>										
OC-ALC/LH	PMA	FY01	180	180	538	2,285	2,555	498	Continuing	TBD
OC-ALC/LAS	206	FY01	400	400	400	1,435	2,250	500	Continuing	TBD
OO-ALC/LIR	616	Aug 01	100	100	100	200	200	5,700	Continuing	TBD
SER/CASU	MIPR	Aug 01	100	100	100	300	300	300	Continuing	TBD
Miscellaneous	BTR/SIBR	Oct 00								
<u>Test and Evaluation Organizations</u>										
419 FLTS	Project Order	Aug 01	30	30	50	1,800	7,350	11,875	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					<b>DATE</b> <b>February 2003</b>	
<b>BUDGET ACTIVITY</b>			<b>PE NUMBER AND TITLE</b>			<b>PROJECT</b>
<b>07 - Operational System Development</b>			<b>0101113F B-52 SQUADRONS</b>			<b>4810</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	26,670	30,588	19,619	9,776	TBD	TBD
Subtotal Support and Management	1,138	4,220	5,305	6,998	TBD	TBD
Subtotal Test and Evaluation	50	1,800	7,350	11,875	TBD	TBD
Total Project	27,858	36,608	32,274	28,649	TBD	TBD



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS					PROJECT 4875		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4875	Situational Awareness Defensive Improvement	28,417	22,438	0	0	0	0	0	0	0	70,925
<p>(U) <b><u>A. Mission Description</u></b>            This modification preserves B-52 survivability and adds cornerstone architecture for stand off jamming (SOJ) capability in support of Air Force's system of system approach for airborne electronic (AEA) by replacing the AN/ALR-20 Panoramic Receiver System. The SADI system will automatically identify detected threat and early warning (EW) radars on the Radar Warning Receiver (RWR) display. SADI will confirm that onboard jammers are covering the intended threat or EW radar and is required for jammer employment for mission success. The present AN/ALR-20 system, designed in the 1960's, is becoming unsupportable due to vanishing vendors and obsolete technology and has extremely limited SOJ support capability. Funding is provided for engineering and planning studies for potential future weapon system enhancements (weapons, sensors, and avionics) and for weapon system operational/safety, supportability, maintainability, reliability, and Total Ownership Cost (TOC) improvements.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$5,790 Group A kit and NRE</p> <p>(U) \$7,879 Group B kit and NRE</p> <p>(U) \$1,175 Ground/Flight Test</p> <p>(U) \$2,925 Program Management</p> <p>(U) \$3,648 Software</p> <p>(U) \$7,000 System Concept Studies (Includes System Engineering, System Capability Trades, Modeling and Simulation, and Studies and Analysis).</p> <p>(U) \$28,417 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$15,438 System Concept Studies (Includes CTD planning, System Engineering, System Capability Trades, Modeling and Simulation, Studies and Analysis, and Subsystem Source Selection).</p> <p>(U) \$4,000 Support Equipment/NRE</p> <p>(U) \$3,000 Program Management</p> <p>(U) \$22,438 Total</p>											
Project 4875		Page 8 of 12 Pages					Exhibit R-2A (PE 0101113F)				

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>	PROJECT <b>4875</b>
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(U) **A. Mission Description Continued**

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

The SADI program is being rebaselined due to significant requirement/capability changes to support B-52 SOJ mission. FY03 funding will cover FY04 efforts to ensure program continuity.

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

(U) \$0 Not Applicable

(U) \$0 Total

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

The SADI program is being rebaselined due to significant requirement/capability changes to support B-52 SOJ mission.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	28,417	22,438							Continuing	Continuing
(U) Other APPN									Continuing	Continuing
(U) Aircraft Procurement (BP1100)									Continuing	Continuing

(U) **D. Acquisition Strategy**

At the time of R Doc preparation, the B-52 SPO was preparing an FY03 acquisition strategy and spend plan (part of the on going rebaseline effort) which will define the future program and its funding requirements. The proposed spend plan is reflected (in part) in this documentation. The final and approved spend plan will be available prior to staffer day briefings.

(U) **E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award	*				*							
(U) Interface Development	*	*	*	*								
(U) Test Planning	*	*	*	*	*	X	X	X				
(U) Group A Design	*	*	*	*								

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101113F B-52 SQUADRONS</b>	PROJECT <b>4875</b>
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(U) **E. Schedule Profile Continued**

	<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Group A Fabrication	*	*	*	*										
(U) Group B Design	*	*	*	*										
(U) Group B Fabrication	*	*	*	*										

\* = Complete

X = On going

Note: Profiles with quarterly decision points reflect administration modifications and incremental work.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0101113F B-52 SQUADRONS</b>				<b>4875</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Hardware/NRE					13,669					
(U)	Software					3,648					
(U)	Program management					2,925		3,000			
(U)	Ground/Flight Test					1,175					
(U)	System Concept Studies					7,000		19,438			
(U)	Total					28,417		22,438			
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
Boeing Military Programs,	CPAF	Aug 00	2,793		17,595	24,422	19,438			61,455	
Wichita Division											
<u>Support and Management Organizations</u>											
OC-ALC/LH	PMA	Jun 00	225	N/A	813	2,069	1,590			4,472	
WR/ALC	616	Aug 00	98	N/A	98	127	320			545	
OO-ALC/YWT			N/A	N/A	1,404	280	250			1,934	
HQ ACC/XRA52	MORD	Jun 00	10	N/A	10	215	250			475	
<u>Test and Evaluation Organizations</u>											
36 EWS//EWF	616	Jun 00	10	N/A	50	998	340			1,388	
419 FLTS	616	Jun 00	10	N/A	50	206	200			456	
2LG & 49 TES	616	Jun 00	10	N/A	50	100	50			200	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>				<b>0101113F B-52 SQUADRONS</b>				<b>4875</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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				17,595	24,422	19,438			61,455
Subtotal Support and Management				2,325	2,691	2,410			7,426
Subtotal Test and Evaluation				150	1,304	590			2,044
Total Project				20,070	28,417	22,438			70,925

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

DATE  
**February 2003**

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
<b>07 - Operational System Development</b>			<b>0101120F ADVANCED CRUISE MISSILE</b>							<b>4798</b>	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
4798 Life Extension Program	2,302	2,727	13,364	7,760	5,795	6,917	3,006	386	0	45,973	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	

In FY 2003, Project 4798 renamed Life Extension Program (formerly Life Extension Study). This action did not change program content.  
 In FY 2004, Project 4798, Life Extension Program, includes two new start efforts, one of which was funded by Cost of War Defense Emergency Response Funds (DERF).

**(U) A. Mission Description**

AGM-129, The Advanced Cruise Missile (ACM), is a low-observable air-launched, strategic missile with significant improvements over the Air Launched Cruise Missile B version (ALCM-B) in range, accuracy, and survivability. Armed with a W-80 warhead, it is designed to evade air and ground-based defenses in order to strike heavily defended, hardened targets at any location within any enemy's territory. The ACM is designed for B-52H external carriage and there is currently 404 ACM in the inventory. The ACM fleet design service life expires between the years 2003 and 2008.

A Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ACM Service Life to FY30. The results of Service Life Extension Program (SLEP) studies will identify system components that cannot be sustained beyond the standard service life. The current system is experiencing obsolescence of parts/components. Missile support equipment and components are becoming non-supportable. Service Life Extension of this critical weapon is essential to meet ACC and STRATCOM SIOP commitments.

The current requirement for ACM SLEP is the development of a conforming JTIK door design. The program will develop 2 prototype JTIK doors for qualification and system-level testing.

New test range safety requirements and a Department of Energy (DOE)-mandated Joint Test Assembly (JTA) redesign, required the AF to re-configure existing Joint Test Instrumentation Kit (JTIK) doors and Non-tactical Test Instrumentation Kit (NTIK) doors. Range Commanders Council (RCC) #319 safety mandates require flight test vehicles, used on the test ranges, to possess a Global Positioning System (GPS) tracking capability in FY04 due to the shutting down of existing range radar systems.

Together government and contractor personnel prepared an efficient, economical program schedule, in order to realize potential program economies of scale and to ensure the contractor can manage any increased workload. The JTIK development effort is a low risk program, but an essential effort because DOE-compliant JTIK doors will be required in FY04 in order to continue conducting flight testing for weapon system reliability data collection used for Nuclear Certification and support of

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>										
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101120F ADVANCED CRUISE MISSILE</b>	PROJECT <b>4798</b>										
<p>(U) <b><u>A. Mission Description Continued</u></b> the W-80 Warhead Life Extension Program (LEP).</p> <p>The ACM Subsystem Simulator (SSS) and Advanced Missile Simulator (AMS) Upgrade will develop, integrate, test and install a real-time simulation system that replaces aging and obsolete equipment. This requirement was identified as part of the ACM SLEP study to upgrade the simulation systems in the AF Avionics Software Integration Facility (ASIF) and the System Integration Lab (SIL). To extend the service life of the ACM to FY30, the real-time computer based simulation systems must be upgraded to resolve aging and obsolescence issues. These systems have many irreplaceable electronic components with high probability of failure. The ability to resolve real-time missile hardware and software anomalies and missile flight test investigations will not be possible without a reliable simulation system provided by this upgrade.</p> <p>Development of an ACM Aging and Surveillance (A&amp;S) program for the Nuclear Weapons Sub-System (NWSS) components is a Program Management Directive (PMD) requirement. The A&amp;S program is required to analyze critical warhead interface missile components. Fault diagnostics will be accomplished and the data collected from the A&amp;S tests will indicate failure trends and the rate of aging within each component. This effort will develop test equipment, utilizing Commercial Off-the-Shelf (COTS) to the maximum extent possible, and software necessary to lay in a test program for the NWSS components.</p> <p>Cruise Missile Functional Ground Testing (FGT) is required to provide the capability to non-destructively accomplish functional flight simulation of a full-up missile flight profile on the ground to obtain additional reliability data. This capability will provide critical reliability data without the cost of flight test mission and will also retain the missiles in the inventory. This effort will develop the software and hardware for an existing test facility for accomplishment of the ground tests.</p> <p>The W-80 LEP replaces warhead components to extend its service life. The National Nuclear Security Administration (NNSA) is responsible for most of the refurbishment costs associated with the W-80 Warhead. The Air force is responsible for funding ACM/W-80 integration. Integration includes evaluation of interface control changes as part of the Initial Concept Design, missile testing and logistics requirements necessary to support a First Production Unit (FPU) delivery of 2008.</p>												
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>JTIK Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$870</td> <td>Continued Integration and Compatibility Testing of New JTIK Components</td> </tr> <tr> <td>(U) \$1,010</td> <td>Continued JTIK Door/Vehicle Qualification and Integration</td> </tr> <tr> <td>(U) \$422</td> <td>Continued Electromagnetic Compatibility (EMC) Testing of New JTIK Door/Vehicle</td> </tr> <tr> <td>(U) \$2,302</td> <td>Total</td> </tr> </table>			(U) \$0	JTIK Accomplishments/Planned Program	(U) \$870	Continued Integration and Compatibility Testing of New JTIK Components	(U) \$1,010	Continued JTIK Door/Vehicle Qualification and Integration	(U) \$422	Continued Electromagnetic Compatibility (EMC) Testing of New JTIK Door/Vehicle	(U) \$2,302	Total
(U) \$0	JTIK Accomplishments/Planned Program											
(U) \$870	Continued Integration and Compatibility Testing of New JTIK Components											
(U) \$1,010	Continued JTIK Door/Vehicle Qualification and Integration											
(U) \$422	Continued Electromagnetic Compatibility (EMC) Testing of New JTIK Door/Vehicle											
(U) \$2,302	Total											
Project 4798	Page 2 of 8 Pages	Exhibit R-2 (PE 0101120F)										

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

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0101120F ADVANCED CRUISE MISSILE

4798

(U) **A. Mission Description Continued**(U) FY 2003 (\$ in Thousands)

(U) \$0 JTIK Accomplishments/Planned Program

(U) \$913 Initiate System Design for Subsystem Simulator (SS) and Advanced Missile Simulator (AMS) Upgrade

(U) \$930 Begin Integration Design for 3rd Party Software to Support PDR of SS and AMS upgrade

(U) \$884 Re-Host Raytheon Developed/Maintained software for SS and AMS

(U) \$2,727 Total

(U) FY 2004 (\$ in Thousands)

(U) \$0 Subsystem Simulator and Advanced Missile Simulator Accomplishments/Planned Program

(U) \$1,360 Continue system design efforts for SS and AMS, SS software CDR, Interface design review, detailed component design, component fabrication and test, hardware acquisition,

(U) \$1,120 Conduct SS and AMS software development, system integration and test, validation and verification (V&V)

(U) \$530 SS and AMS Component fabrication and test, hardware integration and test.

(U) \$0 Nuclear Weapons Sub-system (NWSS) Aging & Surveillance Accomplishments/Planned Program

(U) \$807 Conduct Nuclear Weapons Subsystem (NWSS) component aging & surveillance program, initial design, PDR, hardware acquisition, software design & code

(U) \$687 Complete Final Design Review, system integration and test, engineering data

(U) \$560 Conduct acceptance testing, documentation, delivery and installation, demonstration

(U) \$0 Cruise Missile Functional Ground Test (FGT) Accomplishments/Planned Program

(U) \$1,800 Begin Cruise Missile Functional Ground Test (FGT) software design/development

(U) \$1,800 Begin FGT hardware design/development

(U) \$1,400 Begin FGT System/Missile integration and test

(U) \$0 ACM/W-80 Warhead Life Extension Program Support Accomplishments/Planned Program

(U) \$2,035 ACM Interface Change evaluations and contractor Interface Control Document Support for W-80 LEP

(U) \$125 ACM/W-80 Integration Data development

(U) \$1,140 ACM/W-80 Integration Ground Test and Flight Test support

(U) \$13,364 Total

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

These programs are in Budget Activity 7, Operational System Development, due to efforts supporting a fielded, post Milestone III weapon system.

Project 4798

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Exhibit R-2 (PE 0101120F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0101120F ADVANCED CRUISE MISSILE</b>			PROJECT <b>4798</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>						
(U)	Previous President's Budget	2,462	2,788	5,310	38,305						
(U)	Appropriated Value	2,462	2,788								
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions		-30		-30						
	b. Small Business Innovative Research	-149			-314						
	c. Omnibus or Other Above Threshold Reprogram		-31		-31						
	d. Below Threshold Reprogram										
	e. Rescissions	-11			-11						
(U)	Adjustments to Budget Years Since FY 2003 PBR			8,054	8,054						
(U)	Current Budget Submit/FY 2004 PBR	2,302	2,727	13,364	45,973						
(U)	<u>Significant Program Changes:</u>										
	FY04 increase is a result of Cost of War funding to develop Cruise Missile Functional Ground Test (FGT) capability, and to begin ACM interface evaluation and flight test support of W-80 LEP.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	MPAF, Aeronautical Vehicle (BA02, PE 0101120F, P-2)	0	0	0	0	0	0			0	0
(U)	MPAF, Missile Modifications (BA03, PE 0101120F, P-9)	773	3,313	3,498	4,211	3,215	1,274	96	0	0	16,380
(U)	MPAF, Replenishment Spares (BA04, PE 0101120F, P-17)	6,801	9,565	9,379	9,644	8,314	1,951	343	352	Continuing	TBD
(U)	MPAF, Missile Modification Initial Spares (BA04, PE 0101120F, P-16)	0	379	311	309	309	244	252	258	Continuing	TBD
Project 4798		Page 4 of 8 Pages							Exhibit R-2 (PE 0101120F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0101120F ADVANCED CRUISE MISSILE</b>					<b>4798</b>			
<b>(U) E. Acquisition Strategy</b>													
JTIK door development will be performed by the prime contractor, Raytheon, utilizing Cost Plus Fixed Fee (CPFF). Sub-System Simulator and Advanced Missile Simulator Upgrades will be performed by the prime contractor, Raytheon, utilizing a Firm Fixed Price (FFP) contract. Aging & Surveillance (A&S) program development is planned to be by a FFP contract with E-Spectrum Technologies. The Cruise Missile FGT development will be performed by the prime contractor, utilizing a CPFF contract. Contract support for W-80 LEP will be acquired using Time & Materials (T&M) on existing sustainment contract.													
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) FY01 New-Start approval received 11/21/01	*												
(U) JTIK Development													
(U) Contract Award		*											
(U) PDR			*										
(U) CDR				*									
(U) Prototype delivery (2)				*	X								
(U) Integration Testing					X	X							
(U) Qual, Test & Evaluation					X	X	X	X					
(U) Subsystem Simulator/Advanced Missile Sim													
(U) Contract Award						X							
(U) SS Software PDR								X					
(U) SS Software CDR										X			
(U) AMS PDR											X		
(U) AMS CDR (1Q FY05)													
(U) SS Hardware Integration Test (1Q FY05)													
(U) System Integration Testing (2Q FY05)													
(U) FCA/PCA (2Q FY05)													
(U) Deliver & Install (4Q FY05)													
(U) ACM NWSS A&S program development													
(U) Contract Award										X			
(U) PDR										X			
(U) Final Design review												X	
Project 4798													

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

DATE  
February 2003

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101120F ADVANCED CRUISE MISSILE</b>	PROJECT <b>4798</b>
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(U) **F. Schedule Profile Continued**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Deliver/Install (2Q FY05)												
(U) Acceptance Test (3Q FY05)												
(U) Functional Ground Test Development												
(U) Contract Award										X		
(U) PDR											X	
(U) CDR												X
(U) FQT (2Q FY05)												
(U) Delivery (3Q FY05)												
(U) ACM/W-80 Life Extension Program (LEP) Integration Support												
(U) Contract Award									X			
(U) Ground Test (Support)										X	X	
(U) Flight Test (Support)											X	

Note: \* Represents a Completed Event; X Represents a Planned Event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0101120F ADVANCED CRUISE MISSILE</b>			<b>4798</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	JTIK Integration testing, door/vehicle qualification, EMC testing of new JTIK door/vehicle				2,302					
(U)	Perform system design for Sub-System/Advance Missile Simulator SS/AMS Upgrade						913			
(U)	Integration design for 3rd party software to support PDR of SS/AMS upgrade						930			
(U)	Re-Host Raytheon developed/maintained software for SS/AMS						884			
(U)	Continued SS/AMS system design, SS software CDR, interface design review, detailed component design, component fab and test, hardware acquisition								1,360	
(U)	Conduct SS/AMS software development, system integration & test, validation & verification (V&V)								1,120	
(U)	SS/AMS component fabrication and test, hardware integration and test.								530	
(U)	A&S initial design, PDR, hardware acquisition, software design & code								807	
(U)	A&S final design review, system integration and test, engineering data								687	
(U)	A&S acceptance testing, documentation, delivery & installation, demonstration								560	
(U)	Cruise Missile Functional Ground Test (FGT) software design/development								1,800	
(U)	FGT hardware design/development								1,800	
(U)	FGT System/missile integration and test								1,400	
(U)	ACM/W-80 LEP Interface Control Change evaluation and design support								2,035	
(U)	ACM/W-80 Integration data development								125	
(U)	ACM/W-80 Integration ground test and flight test support								1,140	
(U)	Total				2,302		2,727		13,364	
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
										<u>Total</u>
										<u>Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0101120F ADVANCED CRUISE MISSILE					4798
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Raytheon (JTIK)	CPFF	Dec 01	6,183	6,183	3,881	2,302	0	0	0	6,183
Raytheon (SS/AMS)	CPFF	2Q FY03	8,532	8,532	0	0	2,727	3,010	2,795	8,532
E Spectrums (A&S)	CPFF	2Q FY04	2,054	2,054	0	0	0	2,054		2,054
Raytheon (FGT)	CPFF	2Q FY04	5,000	5,000	0	0	0	5,000	0	5,000
Raytheon (W80 Sup)	T&M	1Q FY04	7,996	7,996	0	0	0	1,996	6,000	7,996
Raytheon (SLEP)	TBD	2Q FY06	TBD	TBD					6,012	6,012
<u>Support and Management Organizations</u>										
OC-ALC/PSM (W80 Sup)		2Q FY04	1,092	1,092	0	0	0	200	892	1,092
<u>Test and Evaluation Organizations</u>										
49 TES (W80 Sup)	Fund	2Q FY04	9,104	9,104	0	0	0	1,104	8,000	9,104
	cite/MIPR									
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										
None										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					3,881	2,302	2,727	12,060	14,807	35,777
Subtotal Support and Management					0	0	0	200	892	1,092
Subtotal Test and Evaluation					0	0	0	1,104	8,000	9,104
Total Project					3,881	2,302	2,727	13,364	23,699	45,973

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0101122F AIR LAUNCHED CRUISE MISSILE</b>						PROJECT <b>4797</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4797	Flight Testing & Navigation Enhancement	9,973	20,070	29,804	11,868	2,244	3,701	5,721	386	0	94,700
	Quantity of RDT&E Articles	0	5	0	0	0	0	0	0	0	0

In FY04, Project 4797, Flight Testing & Navigation Enhancement, includes new start efforts funded by Cost of War Defense Emergency Response Funds (DERF).

**(U) A. Mission Description**

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W-80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

A Service Life Extension Plan (SLEP) was developed to meet an AF Long Range Plan requirement to extend ALCM Service Life to FY30. The results of Service Life Extension Program (SLEP) studies identified system components that cannot be sustained beyond the standard service life. The current system is experiencing obsolescence of parts/components. Missile components and support equipment are becoming non-supportable. Service Life Extension of this critical weapon is essential to meet Air Combat Command (ACC) and United States Strategic Command (USSTRATCOM) Single Integrated Operational Plan (SIOP) commitments.

Initial SLEP assessment required the development and acquisition of new Conventional Air Launched Cruise Missile (CALCM)/ALCM Test Instrumentation Kit (CATIK) flight test payload doors, replacement of the current navigation system, and replacement of Operational Test & Evaluation (OT&E) hardware and software. CATIK commenced in FY00 based on the AF decision to maintain this weapon system beyond its current design life. Previous payload doors were purchased to support the original service life only. CATIK development efforts are driven by depleting test assets, parts obsolescence, Range Command Council 319 (RCC-319) safety requirements and re-certification of the Flight Termination System. Five CATIK RDT&E test articles will be developed to support Developmental Test & Evaluation (DT&E) flight tests. The five test articles will be used to conduct one ALCM Operational Test Launch, one ALCM Joint Test Assembly (JTA) integration test to ensure compatibility with the warhead package, one CALCM Operational Test Launch, one Captive Carry and a backup test asset.

CATIK payload doors, containing range transponder and battery, are required to be replaced due to depleting test assets to continue flight tests beyond FY06. The new CATIK payload doors will provide an inventory of test assets for continued flight testing through FY16, based on current flight test requirements. W-80 LEP (current interface) - CATIK will be designed to a JTA-R1. If the W-80 LEP program changes interface, CATIK will require modification and additional funding/schedule. The CATIK payload door is a critical component for determining Weapon System Reliability (WSR) and for supporting the W-80 Life Extension Program (LEP) (current interface).

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>												
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0101122F AIR LAUNCHED CRUISE MISSILE</b>	PROJECT <b>4797</b>												
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>The current Inertial Navigation Element (INE) has been identified as the ALCM item with largest number of unscheduled maintenance hours. The INE is beset with parts obsolescence, little or no spares inventory, and manufacturers who have gone out of business or no longer support the antiquated technology. The current INE units are only maintainable through the use of a decreasing number of cannibalized parts from other INE units. The redesigned INE will utilize a more robust and maintainable solid-state circuitry.</p> <p>Operational Test &amp; Evaluation (OT&amp;E) hardware and software replacement will occur concurrently with the CATIK and INE development efforts.</p> <p>FY04 EMD efforts consist of qualification tests of the CATIK doors. Individual component qualification will have already been completed at the subvendors. FY05 EMD efforts is flight tests finishing up with the flight test report FY06. Contract period of performance ends April 06.</p> <p>Cruise Missile Functional Ground Testing (FGT) is required to provide the capability to non-destructively accomplish functional flight simulation of a full-up missile flight profile on the ground to obtain additional reliability data. This capability will provide critical reliability data without the costs of flight test missions and will also retain the missiles in the inventory. This effort will develop the software and hardware for an existing test facility for accomplishment of the ground tests.</p> <p>The W-80 LEP replaces warhead components to extend its service life. The National Nuclear Security Administration (NNSA) is responsible for most of the refurbishment costs associated with the W-80 warhead. The Air Force is responsible for funding ALCM W-80 integration. Integration includes evaluation of interface control changes as part of the Initial Concept Design (ICD), missile testing, and logistics requirements necessary to support a First Production Unit (FPU) delivery of 2008.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>- Accomplishments/Planned Program</td> </tr> <tr> <td>(U) \$3,185</td> <td>- Continued CATIK payload door Interface Design/Development and Flight Termination System Engineering Change Proposal (ECP)</td> </tr> <tr> <td>(U) \$3,323</td> <td>- Continued update of CATIK Interface Control Documents to Include Flight Termination System Requirements, acquire required hardware</td> </tr> <tr> <td>(U) \$1,150</td> <td>- Completed Pre-EMD INE Hardware Interface Development, Testing and Integration</td> </tr> <tr> <td>(U) \$2,315</td> <td>- Completed Pre-EMD INE Software Emulation Development, Testing and Integration</td> </tr> <tr> <td>(U) \$9,973</td> <td>Total</td> </tr> </table>			(U) \$0	- Accomplishments/Planned Program	(U) \$3,185	- Continued CATIK payload door Interface Design/Development and Flight Termination System Engineering Change Proposal (ECP)	(U) \$3,323	- Continued update of CATIK Interface Control Documents to Include Flight Termination System Requirements, acquire required hardware	(U) \$1,150	- Completed Pre-EMD INE Hardware Interface Development, Testing and Integration	(U) \$2,315	- Completed Pre-EMD INE Software Emulation Development, Testing and Integration	(U) \$9,973	Total
(U) \$0	- Accomplishments/Planned Program													
(U) \$3,185	- Continued CATIK payload door Interface Design/Development and Flight Termination System Engineering Change Proposal (ECP)													
(U) \$3,323	- Continued update of CATIK Interface Control Documents to Include Flight Termination System Requirements, acquire required hardware													
(U) \$1,150	- Completed Pre-EMD INE Hardware Interface Development, Testing and Integration													
(U) \$2,315	- Completed Pre-EMD INE Software Emulation Development, Testing and Integration													
(U) \$9,973	Total													
Project 4797	Page 2 of 9 Pages	Exhibit R-2 (PE 0101122F)												

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>	<b>4797</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 - Accomplishments/Planned Program</p> <p>(U) \$15,635 - Continue CATIK payload door Interface Design/Development; pre-planning for integration testing</p> <p>(U) \$2,360 - Continue update of CATIK Interface Control Documents and purchase hardware</p> <p>(U) \$2,075 - Begin INE Software Emulation Development, Testing and Integration</p> <p>(U) \$20,070 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 - Accomplishments/Planned Program</p> <p>(U) \$180 - Conduct flight test planning for integration testing</p> <p>(U) \$320 - Continue update of CATIK Interface Control Documents and assemble hardware</p> <p>(U) \$4,500 CATIK Test and Evaluation/Government costs</p> <p>(U) \$3,495 Begin INE Hardware Interface Development, Testing and Integration</p> <p>(U) \$7,609 Continue INE Software Interface Development, Testing and Integration</p> <p>(U) \$3,600 Begin Cruise Missile Functional Ground Test (FGT) software design &amp; development</p> <p>(U) \$3,600 Begin Cruise Missile FGT hardware design/development</p> <p>(U) \$2,800 Conduct FGT system/missile integration and test</p> <p>(U) \$1,810 ALCM interface change evaluations and contractor Interface Control Document support for W-80 LEP</p> <p>(U) \$125 ALCM/W-80 integration data development</p> <p>(U) \$1,765 ALCM/W-80 integration ground test and flight test support</p> <p>(U) \$29,804 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>These programs are in Budget Activity 7, Operational System Development, due to efforts supporting a fielded, post Milestone III operational weapon system.</p>		
Project 4797	Page 3 of 9 Pages	Exhibit R-2 (PE 0101122F)



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>			<b>4797</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			6,772	26,713	11,649		73,939			
(U)	Appropriated Value			6,841	20,513						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-69	-217			-286			
	b. Small Business Innovative Research							-670			
	c. Omnibus or Other Above Threshold Reprogram				-226			-226			
	d. Below Threshold Reprogram			3,250				3,250			
	e. Rescissions			-49				-49			
(U)	Adjustments to Budget Years Since FY 2003 PBR					18,155		18,155			
(U)	Current Budget Submit/FY 2004 PBR			9,973	20,070	29,804		94,113			
<b>(U) Significant Program Changes:</b>											
FY02 funding increased due to CATIK Flight Termination System (FTS) range safety requirements.											
FY04 funding increase is a result of Cost of War funding to develop cruise missile Functional Ground Test (FGT) capability, and to begin interface evaluation and flight test support of W-80 Life Extension Program (LEP).											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	MPAF, Missile Modifications (BA 03, PE 0101122F, P-13)	0	1,961	11,478	21,342	24,491	9,529	9,746	9,875	Continuing	TBD
(U)	MPAF, Missile Modifications Initial Spares (BA 04 PE 0101122F, P-16)	0	1,006	1,661	377	178	182	185	188	Continuing	TBD
(U)	MPAF, Replenishment Spares (BA 04, PE 0101122F, P-17)	5,181	4,143	4,076	4,151	4,258	282	286	292	Continuing	TBD

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2003</b>					
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0101122F AIR LAUNCHED CRUISE MISSILE</b>			PROJECT <b>4797</b>					
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) OPAF, Electronics and Telecommunications Equipment (BP83) (BA 03, PE 0101122F, P-18)	1,251	1,312	1,315	1,335	1,378	1,408	1,432	1,455	Continuing	TBD			
<b>(U) E. Acquisition Strategy</b>													
<p>Begun in FY00, CATIK payload door development efforts are performed by Boeing utilizing a Cost Plus Award Fee (CPAF) contract. A CATIK Low Rate Initial Production contract will be awarded in the 3rd quarter FY04 to ensure CATIK production assets are available in late FY06/early FY07 to continue ALCM flight testing beyond FY06 and support W-80 LEP (current interface).</p> <p>In FY02, Pre-EMD INE replacement studies were performed by TRW and Boeing. TRW's effort is defined requirements for enhancement of the INE computer utilizing their patented RePLACE technology using a Time and Materials (T&amp;M) contract. Boeing's efforts concentrated on complete INE replacement using a Cost Plus Award Fee (CPAF) contract. Both INE Pre-EMD efforts will complete in 3rd quarter FY03 at which time a downselect will be conducted and an EMD contract awarded.</p> <p>The Cruise Missile FGT development will be performed by the prime contractor, utilizing a CPAF contract.</p> <p>The ALCM/W-80 LEP integration will be performed by the prime contractor utilizing a Time and Materials (T&amp;M) engineering assignment on an existing sustainment contract.</p>													
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Development Contract Milestones													
(U) -- Contract Award - CATIK (2QFY00)													
(U) -- Contract Award - INE (3QFY01)													
(U) CATIK Development Milestones													
(U) -- Critical Design Review (CDR)									X				
(U) -- Integration/Qual Testing												X	
Project 4797	Page 5 of 9 Pages						Exhibit R-2 (PE 0101122F)						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>					<b>4797</b>			
<b>(U) F. Schedule Profile Continued</b>													
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	-- CATIK Production Contract Award											X	
(U)	--Functional/Physical Config Audit (2QFY05)												
(U)	-- 5 Prototype CATIKs delivered (2QFY05)												
(U)	-- Flight Testing (3QFY05)												
(U)	INE Pre-EMD Milestones												
(U)	-- System Requirements Review (SRR)				*								
(U)	Functional Ground test Development												
(U)	-- PDR										X		
(U)	-- CDR											X	
(U)	-- FQT (3QFY05)												
(U)	ALCM/W-80 Life Extension Program (LEP)												
(U)	-- Contract Award									X			
(U)	-- Ground Test Support										X	X	X
(U)	-- Flight Test Support											X	X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 2003		
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
<b>07 - Operational System Development</b>		<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>		<b>4797</b>
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>				
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U)	CATIK:			
(U)	Hardware Development			
(U)	- Test Articles	0	5,000	
(U)	- Interface Development	2,785	8,095	
(U)	- Testing/Integration	400	2,540	180
(U)	- Development of Interface Control Documents	3,323	2,360	
(U)	Hardware Assembly			320
(U)	Test and Evaluation/Government Costs			4,500
(U)	Software Development			
(U)	- Operational Flight Software	0	0	
(U)	- Automated Test Equipment Development	0	0	
(U)	- Testing/Integration	0	0	
(U)	INE:			
(U)	Hardware Definition/Development			
(U)	- Card Development	1,150	0	1,223
(U)	- Nuclear Certification	0	0	524
(U)	- Testing/Integration	0	0	1,748
(U)	Software Definition/ Development			
(U)	- Operational Flight Software	2,027	2,075	1,223
(U)	- Nuclear Certification	100	0	1,575
(U)	- Mission Planning	0	0	1,223
(U)	- Testing/Integration	88	0	2,773
(U)	- Data Collection/Documentation	100	0	815
(U)	Functional Ground Test (FGT)			
(U)	- FGT Software Design/Development			3,600
(U)	- FGT Hardware Design/Development			3,600
Project 4797				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>			<b>4797</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands) Continued</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	- System/Missile Integration and Test									2,800
(U)	ALCM/W-80 Life Extension Program									
(U)	- ALCM/W-80 LEP Interface Control Change evaluation and design support									1,810
(U)	- ALCM/W-80 integration data development									125
(U)	- ALCM/W-80 integration ground test & flight test support									1,765
(U)	Total					9,973		20,070		29,804
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Development:										
Boeing - CATIK	Eng Asgn/CPAF	Jul 00	29,727	29,977	8,191	6,508	17,995	500	50	33,244
TRW - INE	Eng Asgn/T&M	Jun 01	1,804	1,804	1,441	399			0	1,840
Boeing - INE	Eng Asgn/CPAF	Jul 01	3,066	3,066	1,200	3,066			0	4,266
INE EMD	TBD	Jul 03	TBD	TBD			2,075	11,104	7,668	20,847
Boeing FGT	CPAF	3QFY04	TBD	9,000				9,500	0	9,500
Boeing W-80 LEP	Eng Asgn/T&M	1QFY04	TBD	2,396				2,396	6,600	8,996
<u>Support and Management Organizations</u>										
OC-ALC/PSM		1QFY04	200	200	101			200	652	953
Project 4797					Page 8 of 9 Pages			Exhibit R-3 (PE 0101122F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>				<b>0101122F AIR LAUNCHED CRUISE MISSILE</b>				<b>4797</b>	
<b>(U) Performing Organizations Continued:</b>									
<u>Test and Evaluation Organizations</u>									
Utah Test Range	MIPR	TBD	2,850	2,850	0	0	2,375	475	2,850
49th Test Wing	MIPR	TBD	2,425	2,425	0	0	1,975	450	2,425
Responsible Test Org	TBD	TBD	175	175			150	25	175
Eglin AFB	MIPR	3QFY04	500	500			500	0	500
49th Test Wing (W-80 LEP)	MIPR	2QFY04	1,104	1,104			1,104	8,000	9,104
<b>(U) Government Furnished Property:</b>									
<u>Contract</u>									
<u>Method/Type</u>									
<u>Award or</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>Obligation</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				10,832	9,973	20,070	23,500	14,318	78,693
Subtotal Support and Management				101			200	652	953
Subtotal Test and Evaluation				0	0		6,104	8,950	15,054
Total Project				10,933	9,973	20,070	29,804	23,920	94,700

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0101313F STRAT WAR PLANNING SYS - USSTRATCOM</b>	<b>PROJECT</b> <b>5059</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5059 Strategic War Planning System (SWPS)	0	1,842	1,748	1,652	1,556	1,716	1,679	1,461	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, global Command control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR) and specialized planning expertise to the joint warfighter. To fulfill these missions, the Strategic War Planning System (SWPS) must be capable of both deliberate and adaptive planning employing the full spectrum of kinetic and non-kinetic weapons. The planning system will continue to evolve as weapon systems are matured, new systems are developed and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD). SWPS infrastructure capabilities develop, verify, and produce Operational Plan (OPLAN) 8044, Theater Support Planning Documents, and new Unified Command Plan (UCP) taskings and related products. SWPS includes automatic data processing equipment (ADPE), software, facilities support, manpower, and training to support the mission objectives of the SWPS, associated deployable and distributed data processing nodes, and subsidiary systems.

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

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

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,842 Begin modernizing, integrating, and testing SWPS planning tools
- (U) \$1,842 Total

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,748 Continue modernizing, integrating, and testing SWPS planning tools.
- (U) \$1,748 Total



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2003</b>																																																																																																																																											
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0101313F STRAT WAR PLANNING SYS - USSTRATCOM</b>				PROJECT <b>5059</b>																																																																																																																																										
<p>(U) <b><u>B. Budget Activity Justification</u></b> Strategic War Planning System is in budget activity 7, Operational System Development, because the program is operational and currently supports capabilities to create, verify, and produce the OPLAN 8044 and to meet new UCP taskings and other products.</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 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,895</td> <td style="text-align: center;">1,889</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,895</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;">-34</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: center;">-19</td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">-141</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,842</td> <td style="text-align: center;">1,748</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) <b><u>Significant Program Changes:</u></b> N/A</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <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 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>FY 2008</u></th> <th style="text-align: center;"><u>FY 2009</u></th> <th style="text-align: center;"><u>Cost to Complete</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>Estimate</u></th> <td></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Other Procurement, AF WSC 833140 Strategic Command and Control</td> <td style="text-align: center;">5,330</td> <td style="text-align: center;">8,577</td> <td style="text-align: center;">8,794</td> <td style="text-align: center;">15,012</td> <td style="text-align: center;">6,851</td> <td style="text-align: center;">9,681</td> <td style="text-align: center;">6,401</td> <td style="text-align: center;">12,723</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Operations and Maintenance, AF</td> <td style="text-align: center;">41,667</td> <td style="text-align: center;">45,235</td> <td style="text-align: center;">69,573</td> <td style="text-align: center;">89,160</td> <td style="text-align: center;">96,615</td> <td style="text-align: center;">91,538</td> <td style="text-align: center;">82,629</td> <td style="text-align: center;">83,938</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Military Personnel, AF</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">93</td> <td style="text-align: center;">241</td> <td style="text-align: center;">348</td> <td style="text-align: center;">356</td> <td style="text-align: center;">369</td> <td style="text-align: center;">379</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) SCM Funding</td> <td style="text-align: center;">0</td> <td style="text-align: center;">4,000</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	1,895	1,889	TBD	(U) Appropriated Value	0	1,895			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-34			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram		-19			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR	0		-141		(U) Current Budget Submit/FY 2004 PBR	0	1,842	1,748	TBD	(U) <b><u>Significant Program Changes:</u></b> N/A						<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to Complete</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>			(U) Other Procurement, AF WSC 833140 Strategic Command and Control	5,330	8,577	8,794	15,012	6,851	9,681	6,401	12,723	Continuing	TBD	(U) Operations and Maintenance, AF	41,667	45,235	69,573	89,160	96,615	91,538	82,629	83,938	Continuing	TBD	(U) Military Personnel, AF	0	0	93	241	348	356	369	379	Continuing	TBD	(U) SCM Funding	0	4,000	0	0	0	0	0	0			(U) Other APPN										
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Project 5059		Page 2 of 6 Pages				Exhibit R-2 (PE 0101313F)																																																																																																																																												

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

DATE February 2003

BUDGET ACTIVITY  
07 - Operational System Development

PE NUMBER AND TITLE  
0101313F STRAT WAR PLANNING SYS -  
USSTRATCOM

PROJECT  
5059

(U) **E. Acquisition Strategy**

The SWPS ORD requirements to support increased theater requirements will be executed using current contract vehicles at USSTRATCOM. This saves time, money, and streamlines the overall program execution. USSTRATCOM has acquisition contracts in place and within scope to provide required development support for this subsystem. SWPS encompasses software maintenance and hardware maintenance in open systems architecture in a competitive environment. Based on existing and planned workloads for these contracts, USSTRATCOM will prioritize and allocate work, and provide contractual direction to proceed consistent with available funding for each contractor.

This effort is a key piece supporting the overall SWPS Modernization effort which includes new contracts to begin transforming the current strategic planning system to meet Nuclear Posture Review, Defense Planning Guidance (DPG) and recent Unified Command Plan (UCP) objectives. The overall SWPS Modernization efforts will deliver an extensible, scaleable, flexible and Global Information Grid (GIG) compliant architecture and the proposed program plan to develop, integrate, produce and implement an evolutionary acquisition plan that includes spirals. Additionally the plan will also include associated processes, methods, tools and infrastructure the use of which ensures the cost-effective transformation of SWPS. The RDT&E effort shall support the Program objective that New SWPS will not be a simple analytical continuation of the current SWPS; that SWPS will evolve to incrementally give the Government the best value strategic planning system to meet the evolving USSTRATCOM missions and the OSD Strategic Capability Modernization (SCM) vision.

The major contractors for the SWPS projects listed below may be used to achieve the acquisition objective:

- British Aerospace Engineering (BAE) for Air Vehicle application tools
- Northrup Grumman for the Automated, Quality Review and Analysis Software Support
- SAIC for Targeting IPT tool support
- TRW for Missile application tools and USSTRATCOM Information Technology Support
- Lockheed Martin Mission Systems provides analysis model support, hardware maintenance, and systems engineering
- MITRE provides systems architecture and systems engineering support

Theater modifications will be made to comply with the final Nuclear Posture Review study.

(U) **F. Schedule Profile**

FY 2002 FY 2003 FY 2004

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
07 - Operational System Development				0101313F STRAT WAR PLANNING SYS - USSTRATCOM				5059				
(U) <b><u>F. Schedule Profile Continued</u></b>												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Air Vehicle Planning Software Modifications initiation/completion					X					X	
(U)	Missile Graphics Planning System Modifications initiation					X						
(U)	Targeting Applications Model Modifications initiation								X			
	* indicates task completion/X inicates scheduled task											
Project 5059			Page 4 of 6 Pages				Exhibit R-2 (PE 0101313F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101313F STRAT WAR PLANNING SYS - USSTRATCOM			PROJECT 5059		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Air Vehicle Planning Software Modifications							1,193		117
(U)	Missile Graphics Planning System Modifications							649		431
(U)	Targeting Application Model Modifications									1,200
(U)	Total							1,842		1,748
(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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	BAE	TM/AF	Aug 02		TBD	0	0	1,193	117	Continuing
	TRW	TM/AF	Oct 01		TBD	0	0	649	431	Continuing
	SAIC	TM/AF	Oct 01		TBD	0	0	0	1,200	Continuing
	<u>Support and Management Organizations</u>									
	N/A									
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Product Development Property</u>									
	N/A									

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
07 - Operational System Development		February 2003				
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT
07 - Operational System Development		0101313F STRAT WAR PLANNING SYS - USSTRATCOM				5059
(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
N/A						
<u>Test and Evaluation Property</u>						
N/A						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		0	0	1,842	1,748	TBD
Subtotal Support and Management						TBD
Subtotal Test and Evaluation						TBD
Total Project		0	0	1,842	1,748	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER</b>	<b>PROJECT</b> <b>4592</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4592 Region/Sector Operations Modernization Center (R/SAOC)	5,765	34,075	22,573	19,697	24,394	19,482	19,429	19,257	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

Battle Control System (BCS) Family of Systems (FOS) is comprised of fixed Homeland Defense (HLD) [BCS-Fixed (BCS-F) PE 0102326F] and mobile Theater Battle Management (TBM) Command and Control (C2) nodes [BCS-Mobile (BCS-M) PE 0207412F]. Battle Control System-Fixed (BCS-F) is the fixed modernized Region/Sector Air Operations Center (R/SAOC) [also know as Region Air Operations Center-Air Defense Sector (RAOC-ADS)] for the Atmospheric Early Warning System (AEWS). The BCS-F program will provide a modernized Command and Control, Communications, Computer and Intelligence (C4I) system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture to enhance North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition and conventional warfare in the event of aggression toward the North American Continent. The legacy system (R/SAOC) has reached saturation in its capability to receive, process, display, exchange, and employ air surveillance data from current sensor and communication systems, thus contributing to delays in the kill chain. The outdated technology has become increasingly difficult and costly to sustain and provides no opportunity for application enhancement.

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

- (U) \$0** Accomplishments/Planned Program
- (U) \$5,150** Began Alaska Aerospace Surveillance and Range Operations Modernization (AASROM) System Development to include but not limited to Software Development, System Integration, Purchase of Production Representative Hardware, Test, Certification and System Support.
- (U) \$0** Began Acquisition Activities associated with System Development of the BCS-F with \$9M DERF funding. Activities include but are not limited to Software Development, System Integration, Purchase of Government Furnished Equipment, Production Representative Hardware, Test, Certification and System Support.
- (U) \$215** Continue Program Management/Systems Engineering
- (U) \$400** Continue Program Support (i.e. travel, supplies, equipment, misc)
- (U) \$5,765** Total

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER</b>	PROJECT <b>4592</b>
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$31,448	Continue Acquisition Activities associated with System Development of the BCS-F, to include but not limited to Software Development, System Integration, Purchase of Government Furnished Equipment, Production Representative Hardware, Test, Certification and System Support. This is a continuation of activities DERF funds received in FY02.
(U) \$2,087	Continue Program Management/Systems Engineering
(U) \$540	Continue Program Support (i.e. travel, supplies, equipment, misc)
(U) \$34,075	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Program
(U) \$19,767	Continue Acquisition Activities associated with System Development of the BCS-F, to include but not limited to Software Development, System Integration, Purchase of Government Furnished Equipment, Production Representative Hardware, Test, Certification and System Support.
(U) \$2,417	Continue Program Management/Systems Engineering
(U) \$389	Continue Program Support (i.e. travel, supplies, equipment, misc)
(U) \$22,573	Total

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

This program is a budget activity 7 - Operational System Development because it provides funding for the modernization of a currently existing and operating system.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	5,957	35,000	8,000	TBD
(U) Appropriated Value	6,000	35,000		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-43	-370		
b. Small Business Innovative Research	-12			
c. Omnibus or Other Above Threshold Reprogram		-346		
d. Below Threshold Reprogram				

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER</b>	<b>PROJECT</b> <b>4592</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
e. Rescissions	-180	-209		
(U) Adjustments to Budget Years Since FY 2003 PBR			14,573	
(U) Current Budget Submit/FY 2004 PBR	5,765	34,075	22,573	TBD

(U) **Significant Program Changes:**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other Procurement, AF (3080)	0	0	0	4,552	19,279	24,109	19,271	19,227	Continuing	TBD
(U) Other APPN	0	0	0	0						

(U) **E. Acquisition Strategy**

1. The BCS Program Family of Systems is utilizing a spiral development acquisition strategy to further advance Command and Control (C2) concepts supporting future aerospace operations. The program was restructured as a result of 9/11 and NORAD/CC's additional requirements for HOMELAND DEFENSE.

2. The BCS-F Program will modernize/replace the AN/FQY-93 central processors, RADIL and datalinks, the Advanced Interface Control Unit (AICU), and the NORAD Contingency Suite (NCS) to further advance C2 concepts supporting current and future aerospace operations.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Begin NORAD Contingency Suite (NCS)	*											
(U) Complete NCS						X						
(U) Begin RAOC/Alaska				*								
(U) Continue Systems Engineering of RAOC/Alaska					*							
(U) Complete RAOC/Alaska												X
(U) Begin Phase 1 RAOC-ADS Stop-Gap Modernization			*									



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
07 - Operational System Development					0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER					4592			
<b>(U) F. Schedule Profile Continued</b>													
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
	1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Complete Phase 1 RAOC-ADS Stop-Gap Modernization											X	
(U)	Begin Spiral 1 BCS-F Modernization											X	
(U)	Begin Spiral 1 DT&E											X	
(U)	Complete Spiral 1 DT&E											X	
	* Denotes completed event												
	X Denotes planned event												
Project 4592													
Page 4 of 6 Pages													
Exhibit R-2 (PE 0102326F)													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER</b>			<b>4592</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						FY 2002		FY 2003		FY 2004
(U)	System Development/Test					5,150		31,448		19,767
(U)	Program Management/Systems Engineering					215		2,087		2,417
(U)	Program Office Support					400		540		389
(U)	Total					5,765		34,075		22,573
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
LITTON	CPAF	14 Mar 97			48,274				Continuing	TBD
PROLOGIC INC.	CPFF	23 Dec 02				2,591			Continuing	TBD
TBD(1)	TBD	TBD					27,654	16,586	Continuing	TBD
NOTE: TBD(1): Spiral 1 BCS-F RFP was released Jan 03 with Contract Award Planned for Apr 03 - Contractor TBD.										
<u>Support and Management Organizations</u>										
MITRE	Various	N/A	N/A	N/A	7,314	150	1,052	1,080	Continuing	TBD
ITSP	Various	N/A	N/A	N/A	7,787	65	1,035	1,337	Continuing	TBD
Program Office Support	Various	N/A	N/A	N/A	3,003	400	540	389	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing/Other Test Act					241	700	1,373	1,181	Continuing	TBD
Project 4592										
Page 5 of 6 Pages										
Exhibit R-3 (PE 0102326F)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
07 - Operational System Development				February 2003					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0102326F REGION/ SECTOR OPERATIONS CONTROL CENTER 4592					
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
MIDS LVT-1 Terminals	MIPR	Aug 02	Aug 03		1,083				1,083
Various	TBD	TBD	TBD		776	2,421	2,000	Continuing	TBD
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>									
Subtotal Product Development				48,274	4,450	30,075	18,586	TBD	TBD
Subtotal Support and Management				18,104	615	2,627	2,806	TBD	TBD
Subtotal Test and Evaluation				241	700	1,373	1,181	TBD	TBD
Total Project				66,619	5,765	34,075	22,573	TBD	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0203761F Warfighter Rapid Acquisition Program</b>						<b>PROJECT</b> <b>4936</b>	
<b>COST (\$ in Thousands)</b>		<b>FY 2002 Actual</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>FY 2008 Estimate</b>	<b>FY 2009 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
4936	Warfighter Rapid Acquisition Program	28,882	24,372	0	0	0	0	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

WRAP provides rapid transition funding for the development and fielding of the results of highly successful competitive experiments, demonstrations, and innovative approaches to support the Expeditionary Air Force (EAF) and other warfighters. WRAP supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. Candidate projects will compete for WRAP approval and funds based on business case analyses; identified and demonstrated operational impact; cost savings; project development, production, and lifecycle costs; project risk; and cost of delay. The Air Force corporate structure will nominate projects to the VCSAF, CSAF, or SECAF for final approval. Potential sources of projects include, but are not limited to, JEFX, Battlelabs, Joint Experimentation, Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), S&T, and IR&D efforts. MAJCOM/Agencies must commit full project funding in the subsequent programming cycle. AF will ensure the successful projects are incorporated in the future annual planning and programming guidance or POM preparation instructions.

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

- (U) \$0** Accomplishments/Planned Programs
- (U) \$4,636** Begin transition of Panoramic Night Vision Goggles
- (U) \$1,692** Transition C-130 Interim Airborne Communications
- (U) \$3,382** Transition Remote Casualty Locator and Assessment Device
- (U) \$3,071** Transition Force Protection Airborne Surveillance System
- (U) \$2,258** Transition Infrared Cloud Monitor
- (U) \$4,174** Transition GeoReach Next
- (U) \$2,119** Transition Information for Global Reach - Aero Evac
- (U) \$1,696** Transition Missile Field Transportation Control System
- (U) \$2,819** Transition JSS Link Management System - Multi-TADIL
- (U) \$486** Transition Joint Warning and Reporting Network
- (U) \$2,256** Transition Federated Assessment and Targeting Enhancements

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0203761F Warfighter Rapid Acquisition Program</b>		<b>4936</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2002 (\$ in Thousands) Continued</b>					
(U)	\$293	Program Support			
(U)	\$28,882	Total			
<b>(U) FY 2003 (\$ in Thousands)</b>					
(U)	\$0	Accomplishments/Planned Programs			
(U)	\$20,034	FY03 WRAP project selection and project initiation			
(U)	\$4,000	Complete transition of Panoramic Night Vision Goggles			
(U)	\$338	Program Support			
(U)	\$24,372	Total			
<b>(U) FY 2004 (\$ in Thousands)</b>					
(U)	\$0	Accomplishments/Planned Programs			
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) B. Budget Activity Justification</b>					
This effort is Budget Activity 7, Operational System Development, because the program provides a vehicle for developing operational concepts and attendant new technologies for enhancing capabilities of the 21st century aerospace force.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	30,247	25,057	24,992	TBD
(U)	Appropriated Value	30,247	25,057		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,507	-265		
	b. Small Business Innovative Research	-922			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-2,795			
	e. Rescissions	-141			
(U)	Adjustments to Budget Years Since FY 2003 PBR	4,000	-420	-24,992	TBD
Project 4936		Page 2 of 4 Pages	Exhibit R-2 (PE 0203761F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0203761F Warfighter Rapid Acquisition Program</b>				<b>4936</b>			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			<u>Total Cost</u>		
(U)	Current Budget Submit/FY 2004 PBR			28,882	24,372	0			TBD		
(U)	<u>Significant Program Changes:</u> Beginning in FY04, program funding eliminated to fund higher priority transformations.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
<b>(U) E. Acquisition Strategy</b>											
WRAP enables Air Force innovation including experimentation and spiral development processes to decrease fielding timelines and allows development, fielding, or upgrading of systems until the sponsoring MAJCOM/Agency can incorporate them into their subsequent submission. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP approved projects. Each project will have a complete acquisition plan defined and approved prior to project selection. The Air Staff and the Air Force corporate structure will complete an Operations Review and an Acquisition Review to ensure project affordability and appropriateness within the Air Force Overall program. The AF corporate structure will nominate projects to the VCSAF, CSAF and SECAF for final approval.											
<b>(U) F. Schedule Profile</b>											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U)	FY 02 WRAP Project Initiation					*					
(U)	FY 03 WRAP Project Initiation							X			
	* - completed, X - planned										
Project 4936			Page 3 of 4 Pages					Exhibit R-2 (PE 0203761F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0203761F Warfighter Rapid Acquisition Program</b>				<b>4936</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	WRAP Projects					28,882		24,372		0
(U)	Total					28,882		24,372		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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
Various	Various	Various	N/A	N/A	0	28,882	24,372	0	Continuing	TBD
<u>Product Development Organizations</u>										
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>					0	28,882	24,372	0	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					0	28,882	24,372	0	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment					
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	47,732	26,558	51,367	40,155	38,615	39,286	39,346	40,198	Continuing	TBD
4373 JEFX	43,198	20,464	44,836	33,621	33,804	34,487	34,379	35,264	Continuing	TBD
4991 JDEP	4,534	6,094	6,531	6,534	4,811	4,799	4,967	4,934	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments that address emerging operational challenges and are part of the total Air Force (AF) experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies to evolve and transform our aerospace forces and capabilities for the 21st century. They are part of a broader effort to implement the Joint Vision 2020, exploit the Revolution in Military Affairs, demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander, and are important enablers of innovation and transformation.

In FY01, the Air Force moved to a biennial schedule for JEFX conducted in the even years. To reduce risk in the large scale experiments during the even years, a small scale Advanced Process and Technology Experiment (APTX) is scheduled for the odd years. These experiments will focus on specifically targeted capability requirements that will be part of the JEFX experiment. Transition of selected technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. Funding for transition of selected technologies is provided in the odd years only. Specific weapon system development and procurement activities are funded in their own budget lines as applicable.

A full-scale experiment was conducted in FY02. JEFX 02 explored Time Critical Targeting (TCT) and Intelligence, Surveillance and Reconnaissance (ISR) Management in a reduced footprint expeditionary CAOC environment. JEFX 02 also demonstrated the Global Strike Task Force (GSTF) concept as the service component of the joint Millennium Challenge 02.

During FY03, the JEFX Enterprise will conduct small scale experiments and seminars designed to define the architectures, technology, and concepts of operations required to achieve the JEFX 04 objectives and reduce the risk to JEFX 04 experimentation with future generation Air and Space Operations Center (AOC) Weapons



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

DATE  
**February 2003**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0207028F Joint Expeditionary Force Experiment**

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

System and Multi-Sensor Command and Control Constellation (MC2C).

A full scale experiment will be conducted in FY04. JEFX 04 will explore the horizontal integration capabilities of the MC2C with a primary focus on the integration of an Advanced Technology Air Operations Center (AT-AOC) and Advanced Technology Distributed Ground System with Command and Control, Intelligence, Surveillance, Reconnaissance (C2ISR) enabling capabilities of the Multi-Sensor Command and Control Aircraft (MC2A), Family of Interoperable Operational Pictures, Battle Control System, Persistent Battlespace ISR, and the Deployable Theater Information Grid. This future architecture will be designed to achieve C2ISR capabilities required to support GSTF and C2ISR concepts of operations. Those requisite C2ISR capabilities include Effects-Based Operations, Horizontal & Vertical Integration, Dynamic Engagement Control, Predictive Battlespace Awareness, Global Battlespace Visualization, Networked On-Demand Information, and Persistent Battlespace ISR. JEFX 04 will provide a warfighting environment through an operational scenario designed to achieve the objectives of the GSTF.

The Joint Distributed Engineering Plant (JDEP) connects combat system engineering sites and replicates Joint Force Combat Systems to create a network testbed to assess joint Battle Management, Command, Control, Communication, Computers and Intelligence (BMC4I). Its objective is to improve interoperability of weapons systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. JDEP will provide the capability both to improve service and joint systems performance in a system-of-systems environment.

JDEP will link existing service and joint combat system engineering and test sites, such as C4I hardware in-the-loop and computer-program in-the-loop engineering sites (including design activities, software support activities, test and evaluation facilities and training commands) located around the country.

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

This program is Budget Activity 7 because it provides a vehicle for developers, testers and warfighters to experiment, analyze, and explore operational concepts and new technologies to enhance operational system developments and improve capabilities of the 21st century aerospace force.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	44,005	27,161	51,367	
(U) Appropriated Value	44,005	27,161		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-441	-335		
b. Small Business Innovative Research	-1,202			
c. Omnibus or Other Above Threshold Reprogram		-268		

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207028F Joint Expeditionary Force Experiment</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
d. Below Threshold Reprogram	5,603			
e. Rescissions	-233			
(U) Adjustments to Budget Years Since FY 2003 PBR				
(U) Current Budget Submit/FY 2004 PBR	47,732	26,558	51,367	TBD

(U) **Significant Program Changes:**

- FY02: \$2.7M Below Threshold Reprogram (BTR) added to JEFX BPAC 674373 for Chief of Staff Air Force (CSAF) directed initiatives.
- FY02: \$2.9M BTR received to JDEP BPAC 674991 to support Requirements Traceability Management tool.

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>	PROJECT <b>4373</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4373    JEFX	43,198	20,464	44,836	33,621	33,804	34,487	34,379	35,264	Continuing	TBD

**(U) A. Mission Description**

The Joint Expeditionary Force Experiments (JEFX) are large-scale warfighter experiments that address emerging operational challenges and are part of the total Air Force (AF) experimentation effort. They combine live-fly forces and simulations into an operationally representative warfighter environment. These experiments provide a vehicle for experimentation with operational concepts and attendant new technologies to evolve and transform our aerospace forces and capabilities for the 21st century. They are part of a broader effort to implement the Joint Vision 2020, exploit the Revolution in Military Affairs, demonstrate emerging Air Force capabilities to deploy and employ decisive aerospace power for the Joint Force Commander, and are important enablers of innovation and transformation.

In FY01, the Air Force moved to a biennial schedule for JEFX conducted in the even years. To reduce risk in the large scale experiments during the even years, a small scale Advanced Process and Technology Experiment (APTX) is scheduled for the odd years. These experiments will focus on specifically targeted capability requirements that will be part of the JEFX experiment. Transition of selected technologies to the warfighter will be based on a rigorous, defined process which ensures interoperability with fielded programs and maximum return on investment. Funding for transition of selected technologies is provided in the odd years only. Specific weapon system development and procurement activities are funded in their own budget lines as applicable.

A full-scale experiment was conducted in FY02. JEFX 02 explored Time Critical Targeting (TCT) and Intelligence, Surveillance and Reconnaissance (ISR) Management in a reduced footprint expeditionary CAOC environment. JEFX 02 also demonstrated the Global Strike Task Force (GSTF) concept as the service component of the joint Millennium Challenge 02.

During FY03, the JEFX Enterprise will conduct small scale experiments and seminars designed to define the architectures, technology, and concepts of operations required to achieve the JEFX 04 objectives and reduce the risk to JEFX 04 experimentation with future generation Air and Space Operations Center (AOC) Weapons System and Multi-Sensor Command and Control Constellation (MC2C).

A full scale experiment will be conducted in FY04. JEFX 04 will explore the horizontal integration capabilities of the MC2C with a primary focus on the integration of an Advanced Technology Air Operations Center (AT-AOC) and an Advanced Technology Distributed Ground System with command and control, intelligence, surveillance, and reconnaissance (C2ISR) enabling capabilities of the Multi-Sensor Command and Control Aircraft (MC2A), Family of Interoperable Operational Pictures, Battle Control System, Persistent Battlespace ISR, and the Deployable Theater Information Grid. This future architecture will be designed to achieve C2ISR capabilities required to support GSTF and C2ISR concepts of operations. Those requisite C2ISR capabilities include Effects-Based Operations, Horizontal & Vertical

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0207028F Joint Expeditionary Force Experiment</b>	<b>4373</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            Integration, Dynamic Engagement Control, Predictive Battlespace Awareness, Global Battlespace Visualization, Networked On-Demand Information, and Persistent Battlespace ISR. JEFX 04 will provide a warfighting environment through an operational scenario designed to achieve the objectives of the GSTF.</p> <p>This project is BA 7 because it provides a vehicle to developers, testers, and warfighters for experimentation, analysis, operational concepts, and new technologies to enhance operational system developments and improve capabilities of the 21st century aerospace forces.</p>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$10,301	Developed initiatives to introduce new technologies and operational capabilities into the Aerospace Expeditionary Force (AEF) concept of operations (CONOPS) and developed and installed command and control (C2) center upgrades.	
(U) \$8,400	Developed systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems. Integration of systems and processes is the major reason JEFX is an experiment and not simply a demonstration or exercise.	
(U) \$7,400	Planned , designed, coordinated, assessed, and reported the JEFX 02 experiment. Provided expertise to support SPO functions of initiative selection, acquisition, program management, communications and systems planning.	
(U) \$17,097	Implemented architectural configuration, conducted modeling and simulation (M&S), installed and tested the communications infrastructure and executed the JEFX 02 experiment.	
(U) \$43,198	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$800	Select and begin developing initiatives to introduce new technologies and operational capabilities into the AEF CONOPS.	
(U) \$3,800	Develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems. Integration of systems and processes is the major reason JEFX is an experiment and not simply a demonstration or exercise.	
(U) \$4,164	Plan , design, coordinate, assess, and report the experiment. Provide expertise to support SPO functions of initiative selection, acquisition, program management, communications and systems planning.	
(U) \$1,700	Implement architectural configuration, conduct M&S, install and test the communications infrastructure and execute the APTX 03 experiment.	
(U) \$10,000	Transition the integration of new initiatives and legacy systems into an integrated C2ISR baseline. (This funding is in the odd years only.)	
(U) \$20,464	Total	
Project 4373	Page 5 of 15 Pages	Exhibit R-2A (PE 0207028F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207028F Joint Expeditionary Force Experiment</b>				<b>4373</b>		
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>										
<b>(U) \$0 Accomplishments/Planned Programs</b>										
<b>(U) \$12,227 Develop initiatives to introduce new technologies and operational capabilities into the AEF CONOPS and develop and install C2 center upgrades.</b>										
<b>(U) \$8,975 Develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems. Integration of systems and processes is the major reason JEFX is an experiment and not simply a demonstration or exercise.</b>										
<b>(U) \$8,400 Plan , design, coordinate, assess, and report the JEFX 04 experiment. Provide expertise to support SPO functions of initiative selection, acquisition, program management, communications and systems planning.</b>										
<b>(U) \$15,234 Implement architectural configuration, conduct M&amp;S, install and test the communications infrastructure and execute the JEFX 04 experiment.</b>										
<b>(U) \$44,836 Total</b>										
<b>(U) <u>B. Project Change Summary</u></b>										
- FY02: \$2.7M Below Threshold Reprogramming added for Chief of Staff directed initiatives										
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<b>(U) AF RDT&amp;E</b>										
<b>(U) Other APPN</b>										
<b>(U) <u>D. Acquisition Strategy</u></b>										
Electronic Systems Center (ESC), Hanscom AFB, MA and Air Force C2ISR Center, Langley AFB, VA will manage the acquisition and development for the experimentation, integration, and fielding of selected technologies and processes with legacy systems into an integrated C2ISR baseline.										
<b>(U) <u>E. Schedule Profile</u></b>										
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>	
		1	2	3	4	1	2	3	4	1
<b>(U) Call for initiatives for JEFX 2002 (Performed under PE 0207027F)</b>										
<b>(U) Initiative selection, JEFX 2002 (Performed under PE 0207027F)</b>										
<b>(U) Architectural Development, JEFX 2002</b> *										
<b>(U) Conduct Spiral I</b> *										
<b>Project 4373</b>				Page 6 of 15 Pages				Exhibit R-2A (PE 0207028F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2003							
BUDGET ACTIVITY 07 - Operational System Development						PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment						PROJECT 4373						
<b>(U) E. Schedule Profile Continued</b>																		
				<u>FY 2002</u>							<u>FY 2003</u>					<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4						
(U) Conduct Spiral II			*															
(U) Conduct Spiral III			*															
(U) Conduct JEFX 2002 Experiments				*														
(U) Perform Assessment, JEFX 2002 Experiments (1QFY03)				*														
(U) Commence integration of selected initiatives (1QFY03)				*														
(U) Call for Initiatives, APTX 03							X											
(U) Initiative Selection, APTX 03							X											
(U) Architectural Development								X										
(U) Conduct APTX 03									X									
(U) Call for Initiatives, JEFX 04					*													
(U) Initiative Selection, JEFX 04							X											
(U) Architectural Development, JEFX 04								X										
(U) Conduct Spiral I											X							
(U) Conduct Spiral II																X		
(U) Conduct Spiral III																X		
(U) Conduct JEFX 04 Experiments																	X	
(U) Perform Assessment, JEFX 04 Experiments (1QFY05)																	X	
(U) Commence integration of selected initiatives (1QFY05)																	X	
(U) Call for Initiatives, APTX 05																	X	
(U) * Denotes completed event																		
X Denotes planned event																		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207028F Joint Expeditionary Force Experiment			PROJECT 4373			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Selection and prioritization of new and previously considered initiatives; development of initiatives by government and industry; C2 Center Communications and computer development upgrade					10,301		800		12,227	
(U)	Development of systems architecture and integration, including engineering, for the experiment					8,400		3,800		8,975	
(U)	Planning, coordination, and assessing the experiment.					7,400		4,164		8,400	
(U)	Implement architectural configuration, conduct modeling and simulation (M&S), install infrastructure, install and test communications configurations, and execute experiment.					17,097		1,700		15,234	
(U)	Integration of new initiatives and legacy systems into an integrated C2ISR baseline. Funding provided in odd years only.					0		10,000			
(U)	Total					43,198		20,464		44,836	
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	MITRE	FFRDC	1 Oct 02	N/A	N/A	0	6,500	1,250	3,500	Continuing	TBD
	GSA	Multiple	1 Apr 03	N/A	N/A	0	5,500	1,250	2,975	Continuing	TBD
	ACS Defense	IDIQ	1 Oct 02	N/A	N/A	0	1,500	1,066	2,907	Continuing	TBD
	MIT/LL	Various	1 Apr 03	N/A	N/A	0	668				668
	Northrup	Time & Material	1 Jan 03	N/A	N/A	0	0	250	275	Continuing	TBD
	Lockheed Martin	CPAF	1 Mar 03	N/A	N/A	0	0	630	4,500	Continuing	TBD
	SAF/FMBMB	MIPR	1 Feb 03	N/A	N/A	0	0	3,770	0	0	3,770
	AFRL	MIPR	1 Apr 03	N/A	N/A	0	0	315	0	0	315
	AFSOC	MIPR	1 Apr 03	N/A	N/A	0	0	140	0	0	140
Project 4373											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT	
<b>07 - Operational System Development</b>				<b>0207028F Joint Expeditionary Force Experiment</b>						<b>4373</b>	
<b>(U) Performing Organizations Continued:</b>											
<u>Product Development Organizations</u>											
ASC/RAB	MIPR	1 Apr 03	N/A	N/A	0	0	800	0	0	800	
CITPAD	Time & Material	1 Jan 04	N/A	N/A	0	0	0	807	0	807	
Logicon	Time & Material	1 Jan 04	N/A	N/A	0	0	0	435	0	435	
General Dynamics	Time & Material	1 Jan 04	N/A	N/A	0	0	0	290	0	290	
SPO/Other	MIPR	1 Apr 03	N/A	N/A	0	6,154	4,630	7,311	Continuing	TBD	
L3 Comm	GSA	1 Dec 02	N/A	N/A	0	1,000	1,000	1,000	Continuing	TBD	
Sverdrup	GSA	1 Oct 02	N/A	N/A	0	300	300	300	Continuing	TBD	
TRW	GSA	1 Oct 02	N/A	N/A	0	250	0	270	Continuing	TBD	
AFC2TIG	MIPR	1 Feb 03	N/A	N/A	0	8,630	0	8,777	Continuing	TBD	
Alion	GSA	1 Dec 02	N/A	N/A	0	1,811	1,724	1,811	Continuing	TBD	
ACS Defense	GSA	1 Dec 02	N/A	N/A	0	499	475	475	Continuing	TBD	
SAIC	GSA	1 Dec 02	N/A	N/A	0	959	814	970	Continuing	TBD	
L3 Comm	GSA	1 Dec 02	N/A	N/A	0	961	961	1,037	Continuing	TBD	
TRW	GSA	1 Dec 02	N/A	N/A	0	287	287	300	Continuing	TBD	
Various	Various	1 Dec 02	N/A	N/A	0	7,218	257	5,876	Continuing	TBD	
Zel Tech	GSA	1 Dec 02	N/A	N/A	0	220	220	220	Continuing	TBD	
<u>Support and Management Organizations</u>											
Information Technology	Time & Materials	1 Apr 02	N/A	N/A	0	416	325	450	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
46th Test Squadron	Project Order	1 Mar 02	N/A	N/A	0	325	0	350	Continuing	TBD	



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0207028F Joint Expeditionary Force Experiment</b>			<b>4373</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		0	42,457	20,139	44,036	TBD
Subtotal Support and Management		0	416	325	450	TBD
Subtotal Test and Evaluation		0	325	0	350	TBD
Total Project		0	43,198	20,464	44,836	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207028F Joint Expeditionary Force Experiment</b>					PROJECT <b>4991</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4991	JDEP	4,534	6,094	6,531	6,534	4,811	4,799	4,967	4,934	Continuing	TBD
<p>NOTE: FY02 was the first year of Joint Distributed Engineering Plant (JDEP) project execution under PE 0207028F.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Joint Distributed Engineering Plant (JDEP) connects combat system engineering sites and replicates Joint Force Combat Systems to create a network test bed to assess joint Battle Management, Command, Control, Communication, Computers and Intelligence. It's objective is to improve interoperability of weapons systems and platforms through more rigorous interoperability evaluation in a replicated battlefield environment. JDEP will provide the capability both to improve service and joint system performance in a system-of-systems environment.</p> <p>JDEP will link existing Service and Joint combat system engineering and test sites, such as C4I hardware in the loop and computer-program-in-the-loop engineering sites (including Design Activities, software support activities, test &amp; evaluation facilities and training commands) located around the country.</p> <p>This project is BA 7 because it provides a vehicle to developers, testers, and warfighters for experimentation, analysis, operational concepts, and new technologies to enhance operational system developments and improve capabilities of the 21st century aerospace forces.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$1,495 Site activation and Ops support: JDEP leverages as much as possible the existing infrastructure at sites throughout DoD to connect combat system engineering sites to emulate tactical data links. It builds on a federation of sites that are activated expanding on the current sites and identifying which ones should be activated in the future. This process gives geographically separated C2 centers and program offices the ability to work interoperability issues early in the acquisition process. There are 3-programmed AF sites scheduled to be activated. This includes hardware, software and activation cost for each site.</p> <p>(U) \$827 Communication architectures, links and engineering and support for site activities. This includes hardware, software and network connections for each site activated. It incorporates configuration management, scheduling, development &amp; implementation of communications architectures. This will support distributed hardware, software and warfighter-in-the-loop joint integration activities. It leverages connections at existing facilities, which allows a repeatable environment to be readily available to developers, engineers and warfighters.</p> <p>(U) \$590 Existing JDEP support activities. This includes ops and maintenance of the current sites, which are JDEP capable. This includes ops &amp; maintenance support along with contracted personnel to assist in event activities.</p>											
Project 4991			Page 11 of 15 Pages					Exhibit R-2A (PE 0207028F)			

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		February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0207028F Joint Expeditionary Force Experiment</b>	<b>4991</b>
(U) <b><u>A. Mission Description Continued</u></b>		
(U) <b><u>FY 2002 (\$ in Thousands) Continued</u></b>		
(U) \$295	Development of systems architecture and integration, including engineering, for the JDEP repeatable environment. This effort will include development of Joint simulation and stimulation environments to support integration & interoperability assessment. Allows a customer to come to a single facility for resolution to system solutions.	
(U) \$800	Experiment implementation and analysis to participant in various events during pre, during and post exercise events. It includes support staff to assist users in the analysis of data, identifying problems and assistance in system solutions.	
(U) \$527	Development of a simulation/stimulation environment for JDEP events. This incorporates the simulation of an environment that allows customers an opportunity to resolve interoperability issues with realistic scenarios.	
(U) \$4,534	Total	
(U) <b><u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$1,806	Continue site activations and Operations support. This includes hardware, software and activation cost for each site.	
(U) \$1,068	Continue communication architectures, links and engineering and support for site activities.	
(U) \$1,275	Continue existing JDEP support activities to include ops & maintenance support along with contracted personnel to assist in event activities.	
(U) \$490	Continue development of systems architecture and integration, including engineering, for the JDEP repeatable environment.	
(U) \$1,240	Continue experiment implementation and analysis to participant in various events during pre, during and post exercise events.	
(U) \$215	Continue development of a simulation/stimulation environment for JDEP events.	
(U) \$6,094	Total	
(U) <b><u>FY 2004 (\$ in Thousands)</u></b>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$1,973	Continue site activations and Operations support. This includes hardware, software and activation cost for each site.	
(U) \$1,318	Continue communication architectures, links and engineering and support for site activities.	
(U) \$1,275	Continue existing JDEP support activities to include ops & maintenance support along with contracted personnel to assist in event activities.	
(U) \$490	Continue development of systems architecture and integration, including engineering, for the JDEP repeatable environment.	
(U) \$1,163	Continue experiment implementation and analysis to participant in various events during pre, during and post exercise events.	
(U) \$312	Continue development of a simulation/stimulation environment for JDEP events.	
(U) \$6,531	Total	



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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207028F Joint Expeditionary Force Experiment</b>	<b>PROJECT</b> <b>4991</b>
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Site Activation and Ops support	1,495	1,806	1,973
(U) Communication architectures, links, and engineering support	827	1,068	1,318
(U) Existing JDEP support activities	590	1,275	1,275
(U) Development of systems architecture and integration for JDEP repeatable environment	295	490	490
(U) Experiment implementation and analysis to participants	800	1,240	1,163
(U) Development of a simulation/stimulation environment for JDEP events	527	215	312
(U) Total	4,534	6,094	6,531

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

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
<u>Support and Management Organizations</u>										
ESC	MIPR	1 Oct 01	N/A	N/A	0	1,090	319	350	Continuing	TBD
ESC	Various	Various	N/A	N/A	0	150	0	0	Continuing	TBD
Boeing	Various	Various	N/A	N/A	0	350	350	350	Continuing	TBD
Northrop Grumman	T&M	15 Dec 02	N/A	N/A	0	0	50	200	Continuing	TBD
ESC	Various	Various	N/A	N/A	0	500	0	0	Continuing	TBD
DISA	MIPR	1 Oct 01	N/A	N/A	0	650	1,068	1,218	Continuing	TBD
ASC	ITSP	1 Oct 01	N/A	N/A	0	590	768	790	Continuing	TBD
MITRE	FFRDC	1 Oct 01	N/A	N/A	0	470	660	675	Continuing	TBD
DARPA/DISA	MIPR	1 Dec 01	N/A	N/A	0	150	2,090	2,090	Continuing	TBD
RAYTHEON	CPFF	1 Dec 01	N/A	N/A	0	160	215	315	Continuing	TBD
ESC	Various	Various	N/A	N/A	0	100	0	0	Continuing	TBD
ESC	Various	Various	N/A	N/A	0	324	416	383	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207028F Joint Expeditionary Force Experiment</b>				<b>4991</b>		
<b>(U) Performing Organizations Continued:</b>										
<u>Test and Evaluation Organizations</u>										
46 Test Wing	MIPR	1 Dec 02	N/A	N/A	0	0	158	160	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development										
Subtotal Support and Management					0	4,534	5,936	6,371	TBD	TBD
Subtotal Test and Evaluation					0	0	158	160	TBD	TBD
Total Project					0	4,534	6,094	6,531	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207131F A-10 SQUADRONS</b>					PROJECT <b>4809</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4809	A-10 Squadrons	9,297	7,503	29,729	22,649	9,079	9,241	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

The A/OA-10 is the USAF's primary aircraft for Close Air Support (CAS) and Forward Air Control (FAC) supporting the ground battle including special forces, with a secondary mission of Combat Search and Rescue (CSAR) and the capability to perform interdiction under certain circumstances. Currently, all RDT&E funding supports the Precision Engagement (PE) Program (MN-9805). The PE program is a spiral development program installing a Digital Stores Management System (DSMS), integrated capabilities for smart weapons delivery, targeting pod integration, increased DC power system and joint-service battlefield interface via digital data link. The result of PE is increased tactical effectiveness (more targets destroyed), greater survivability, and decreased chance of fratricide. These modifications are mandatory for the A/OA-10 to adhere to the regional CINC's requirement for a CAS platform.

Spiral #1 of the PE modification integrates 1760 BUS, Joint Direct Attack Munition (JDAM), Wind Corrected Munitions Dispenser (WCMD), LITENING and SNIPER targeting pods, increases the current DC power system by 100% and creates a Digital Stores Management System (DSMS) for the A-10. The DSMS replaces the current Armament Control Panel (ACP) and the Interstation Control Unit (ICU) and adds two Multi-Function Color Displays (MFC) to replace the existing ACP and Television Monitor and replaces the current stick and throttle with improved Hands on Throttle and Stick Capable controls reducing 'heads down' time in the cockpit. During spiral #1, the ICU will be replaced with a new processor: the Central Interface Control Unit (CICU). This program does not purchase JDAM/WCMD munitions, targeting pods or their associated support equipment.

Spiral #2 of the PE modification is Digital Data Link MN-37120. Funding control for the DDL was transferred from the A-10 System Program Office (SPO) to the Tactical Data Links (TDL) SPO for an enterprise management approach to data links however, it is still part of the PE modification. OSD has directed the integration of the Army Joint Tactical Radio Set (JTRS) Cluster 1 radio onto the A-10 as part of the PE modification. Spiral #2 of this modification integrates tests and fields the JTRS Cluster 1 radio with the Enhanced Position Location Reporting System (EPLRS) waveform into the PE program. The EPLRS waveform provides connectivity to the digital battlefield to ensure joint forces communication, reduced fratricide and interoperability with forward C2 platform centers.

\*Note: Funding spike between FY03 and FY04 is caused by increase in developmental/integration efforts. FY02/FY03 consisted mainly of requirement definition design, and preliminary design and software build leading to program Preliminary Design Review. In FY04/FY05 the majority of the engineering design, build and development efforts occur. Actual hardware build, software design, and systems engineering occur as well as developmental flight test efforts during these years.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		February 2003
PE NUMBER AND TITLE <b>0207131F A-10 SQUADRONS</b>		PROJECT <b>4809</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            Funding in these years also include systems integration lab build, testing, and demonstration.</p> <p>* Note: The decision to make PE a spiral program was based on differing PE and JTRS IOC schedules. Although JTRS will be part of the PE program, it will be flight tested and fielded as a separate spiral. Spiral #1 is PE without JTRS, Spiral # 2 is PE with JTRS. Initial aircraft will have JTRS installed as a field level TCTO, the remaining aircraft will come out of the modification line with JTRS.            Aircraft Breakdown: Active 207, Reserve 50, ANG 100, Total 357</p> <p>PDR slipped from 3rd Qtr 02 to 2nd QTR 03 due to lack of funding and the OSD redirection from SADL to JTRS.</p>		
(U) <b><u>FY 2002 (\$ in Thousands)</u></b>		
(U) \$0	Accomplishments/Planned Program	
(U) \$9,297	Initial development/integration efforts for the A-10's largest avionics modification program Precision Engagement (PE); combines six modifications into one comprehensive modification. Requirement definition and initial integration design include JDAM/WCMD, Targeting Pod, DSMS, DC Power, digital data link and 1760 efforts. Tasks include: PVI design requirements, maintenance design, initial hardware design concepts, ILS activities and software concept.	
(U) \$9,297	Total	
(U) <b><u>FY 2003 (\$ in Thousands)</u></b>		
(U) \$0	Accomplishments/Planned Program	
(U) \$7,503	Further development/integration requirements efforts for the A-10's largest avionics modification program PE; combines six modifications into one comprehensive modification A-10 Precision Engagement definition and initial integration design of JDAM/WCMD, Targeting Pod, DSMS, DC Power and 1760 Bus. PE Spiral #1 efforts include Preliminary Design Review, further refinement of PVI design, maintenance concept, installation design, ILS tasks, and design tasks leading to Critical Design Review. PE Spiral #2 efforts include initial research and development efforts for the Joint Tactical Radio System to include initial interface control documentation and initial integration design.	
(U) \$7,503	Total	
(U) <b><u>FY 2004 (\$ in Thousands)</u></b>		
(U) \$0	Accomplishments/Planned Program	
(U) \$29,729	Development/integration tasks for the A-10's largest avionics modification program Precision Engagement; combines six modifications into one comprehensive modification A-10 Precision Engagement definition and initial integration design of JDAM/WCMD, Targeting Pod, DSMS, DC Power and 1760 Bus systems. Spiral #1 efforts include Critical Design Review, hardware design and test, software coding and test, initial Group	
Project 4809	Page 2 of 6 Pages	Exhibit R-2 (PE 0207131F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE	
BUDGET ACTIVITY				PROJECT	
<b>07 - Operational System Development</b>				<b>February 2003</b>	
PE NUMBER AND TITLE		PROJECT			
<b>0207131F A-10 SQUADRONS</b>		<b>4809</b>			
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2004 (\$ in Thousands) Continued</b>					
A design and build, aircraft trail installation aircraft instrumentation and initial developmental flight test. Spiral #2 efforts include Critical Design Review, integration of prototype Joint Tactial Radio Set (JTRS) into the systems integration lab, software PVI design/build and early developmental model testing of JTRS radios.					
(U)	\$29,729	Total			
<b>(U) B. Budget Activity Justification</b>					
The A/OA-10 RDT&E program is in budget activity 7 - Operational System Development because it supports an operational system.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	5,501	7,650	44,275	TBD
(U)	Appropriated Value	5,549	7,650		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-48	-81		
	b. Small Business Innovative Research	-80			
	c. Omnibus or Other Above Threshold Reprogram	0	-66		
	d. Below Threshold Reprogram	3,922			
	e. Rescissions	-46			
(U)	Adjustments to Budget Years Since FY 2003 PBR			-14,546	
(U)	Current Budget Submit/FY 2004 PBR	9,297	7,503	29,729	TBD
<b>(U) Significant Program Changes:</b>					
(U) \$14M reallocated from FY04 to FY05 to smoothflow funding for better program execution.					
(U) OSD directed JTRS Cluster #1 integration onto A-10 as part of the PE modification; due to this change PE modification is now a Spiral development program. Spiral #1 PE w/o JTRS. Spiral #2 PE with JTRS.					
Project 4809					
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Exhibit R-2 (PE 0207131F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207131F A-10 SQUADRONS				PROJECT 4809	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	9,297	7,503	29,729	22,649	9,079	9,241			Continuing	Continuing
(U) Other APPN										
(U) Aircraft Procurement, BP-11 (PE 27131F)	20,563	20,950	17,488	48,315	78,933	81,991	52,486	6,837	Continuing	Continuing
<b>(U) E. Acquisition Strategy</b>										
Precision Engagement and Digital Data Link (now under PE 0207445F) development will be conducted under the A-10 Prime Contract which was awarded in Dec 1997 on a full-and-open basis. Cost Plus Award Fee (CPAF) contract awarded for specific modernization efforts.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3
(U) Precision Engagement Preliminary Design Review (PDR)							X			
(U) Precision Engagement Critical Design Review (CDR)									X	
(U) Precision Engagement Developmental Test										X
* =Completion X=Planned Event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>					<b>0207131F A-10 SQUADRONS</b>			<b>4809</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Integrated Flight and Fire Control Computer (IFFCC)					0		0		0	
(U)	Precision Engagement					9,297		7,503		29,729	
(U)	Mission Support					0		0		0	
(U)	Total					9,297		7,503		29,729	
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Lockheed Martin Systems	Precision	1Q02	79,570	79,570	0	9,297	7,503	29,729	Continuing	TBD
		Engagement									
	Lockheed Martin Systems	Moving Map	2Q07	9,487	9,487	0	0	0	0	Continuing	TBD
		Integration									
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003			
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT			
<b>07 - Operational System Development</b>			<b>0207131F A-10 SQUADRONS</b>		<b>4809</b>			
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>								
Subtotal Product Development			0	9,297	7,503	29,729	TBD	TBD
Subtotal Support and Management								
Subtotal Test and Evaluation								
Total Project			0	9,297	7,503	29,729	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207133F F-16 SQUADRONS					PROJECT 2671		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2671	F-16 Squadrons	107,035	81,639	87,478	99,867	111,954	120,079	111,450	113,519	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 25-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as close air support, combat air patrol, forward air control, battle air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD). Also during these years the aircraft has evolved in its capabilities to exploit the advances made in computer, avionics systems, engine, and structures technologies. The F-16 has been selected by more than 20 air forces around the world. Foreign military sales production will continue well into the 21st century. The F-16 System Program Office (SPO) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission.

The F-16 program develops enhanced combat capability in both the air-to-ground and air-to-air role. Several modifications to improve the F-16's combat capabilities have been combined into a single modification known as the Common Configuration Implementation Program (CCIP) to save significant costs during the production phase. CCIP will modify all Block 40 and Block 50 F-16 aircraft; Block 50 is the lead platform. CCIP integrates several programs under one umbrella and allows incorporation of Modular Mission Computer, color displays, Link 16, Joint Helmet Mounted Cueing System (JHMCS), and Air-to-Air Interrogator (AAI) onto the F-16:

- The main driver for CCIP will be the Link 16 program. Link 16 is a data link that connects main components of a battle arena to maintain awareness and to share battle management data. The Link 16 program designs the appropriate Group A (hardware mounted permanently on aircraft) to incorporate existing Group B (hardware that is easily removed from airplane) developed by the Multifunctional Information Distribution System (MIDS) Office and adapted for use on the F-16.
- To enhance the display of the Link 16 data, the current black and white display will be replaced with a Color Multifunction Display (CMFD).
- To have sufficient computing power in the Block 40/50 aircraft to operate Link 16 and to allow the cost savings by using a common Operational Flight Program, the General Avionics Computer (GAC) must be replaced with the Modular Mission Computer (MMC). The MMC is an upgraded version of the computer that was developed for the EPAF Mid-life Update program. The F-16 SPO is developing MMC upgrades for USAF requirements. The MMC will extend the cost effective life of the F-16 through replacement of three Line Replaceable Units and the addition of significant memory and processing growth provisions.
- JHMCS incorporates a man-mounted, ejection capable helmet mounted display system, with the capability to cue and verify cueing of high off-axis sensors and weapons including the AIM-9x. The F-16 JHMCS program will integrate the following government furnished equipment with the F-16: flight helmet with display optics, image source, helmet tracker transducer w/attached cable, graphics processor/video hardware and software to drive the display, helmet tracker hardware and software. The integration will interface with aircraft computers, weapons and sensor hardware and will provide software to integrate the JHMCS functions with other

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																		
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207133F F-16 SQUADRONS</b>	PROJECT <b>2671</b>																		
<p>(U) <b><u>A. Mission Description Continued</u></b> onboard systems.</p> <p>Note: The flight test increase reflects the amount of OFP work required for the CCIP modification.</p> <p>Other modifications which are being or will be developed during the FYDP:</p> <p>a. Advanced Weapons Integration will integrate Joint Direct Attack Munition (JDAM), Joint Stand-off Weapon (JSOW) and Wind Corrected Munition Dispenser (WCMD) and other smart weapons into the Block 30, Block 40, and Block 50 F-16. This task also includes performing risk reduction activities on advanced weapon integration.</p> <p>b. Global Positioning System (GPS) Integration adds GPS capability to the Block 30 and supports testing of GPS changes to other F-16 Blocks. The F-16 development efforts are complemented by comprehensive Operational Flight Program (OFP) upgrades and flight tests.</p> <p>c. Integrate the targeting pod on the Block 50/52 and transition the HARM Targeting System (HTS) pod to the left inlet hardpoint. This will allow the F-16 Block 50 to perform the SEAD/DEAD mission.</p> <p>d. The Air-to-Air Interrogator (AAI) consists of a single unit interrogator/transponder, a beam forming network, fuselage-mounted array antenna elements, and a lower interrogator antenna. The system provides a higher reliability rate and increases performance over present systems. Initial capabilities include coverage of + or - 60 degrees azimuth and elevation coverage with a + or - 2 degree accuracy, a range accuracy of 152 meters and range of 100 nmi. 32 in beam targets can be handled. Modes 1, 2, 3/A, C, S, and 4 are available. The AAI is developed for Block 50 and will be integrated into Block 40.</p> <p>e. Structural analysis from the on-going Structural Integrity Program (SIP) has indicated that the F-16 is experiencing structural fatigue that will impact the ability of the airframes to reach their 8,000 hrs service life. RDT&amp;E funds are required to design the required structural modifications, as appropriate for each F-16 Block of aircraft. Falcon STAR development costs will be shared with the Multi-National Fighter Program (MNFP) countries.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>ACCOMPLISHMENT/PLANNED PROGRAM</td> </tr> <tr> <td>(U) \$4,795</td> <td>Complete Block 40 Link 16</td> </tr> <tr> <td>(U) \$4,188</td> <td>Complete Block 40 JHMCS</td> </tr> <tr> <td>(U) \$3,230</td> <td>Complete Block 40 Color Display Development/Integration</td> </tr> <tr> <td>(U) \$7,850</td> <td>Complete Block 40 MMC</td> </tr> <tr> <td>(U) \$47,590</td> <td>Continue OFP Updates</td> </tr> <tr> <td>(U) \$28,172</td> <td>Continue Flight Tests DT&amp;E</td> </tr> <tr> <td>(U) \$1,228</td> <td>Complete Block 50 HTS/TGP Capability (Software development, design, test assets)</td> </tr> <tr> <td>(U) \$6,000</td> <td>Continue Falcon STAR (Structural analysis and design)</td> </tr> </table>			(U) \$0	ACCOMPLISHMENT/PLANNED PROGRAM	(U) \$4,795	Complete Block 40 Link 16	(U) \$4,188	Complete Block 40 JHMCS	(U) \$3,230	Complete Block 40 Color Display Development/Integration	(U) \$7,850	Complete Block 40 MMC	(U) \$47,590	Continue OFP Updates	(U) \$28,172	Continue Flight Tests DT&E	(U) \$1,228	Complete Block 50 HTS/TGP Capability (Software development, design, test assets)	(U) \$6,000	Continue Falcon STAR (Structural analysis and design)
(U) \$0	ACCOMPLISHMENT/PLANNED PROGRAM																			
(U) \$4,795	Complete Block 40 Link 16																			
(U) \$4,188	Complete Block 40 JHMCS																			
(U) \$3,230	Complete Block 40 Color Display Development/Integration																			
(U) \$7,850	Complete Block 40 MMC																			
(U) \$47,590	Continue OFP Updates																			
(U) \$28,172	Continue Flight Tests DT&E																			
(U) \$1,228	Complete Block 50 HTS/TGP Capability (Software development, design, test assets)																			
(U) \$6,000	Continue Falcon STAR (Structural analysis and design)																			
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<b>07 - Operational System Development</b>	<b>0207133F F-16 SQUADRONS</b>	<b>2671</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$3,982                      Distributed Training Centers</p> <p>(U) \$107,035                  Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0                            ACCOMPLISHMENTS/PLANNED PROGRAM</p> <p>(U) \$1,978                      Blk 40 AAI Congressional Plus Up</p> <p>(U) \$49,897                    Continue OFP Updates</p> <p>(U) \$468                        ALR-56M</p> <p>(U) \$24,167                    Continue Flight Tests DT&amp;E</p> <p>(U) \$468                        Weapons Integration</p> <p>(U) \$4,661                    Continue Falcon STAR (Structural analysis and design)</p> <p>(U) \$81,639                    Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0                            ACCOMPLISHMENT/PLANNED PROGRAM</p> <p>(U) \$47,415                    Continue OFP Updates</p> <p>(U) \$32,136                    Continue Flight Tests DT&amp;E</p> <p>(U) \$497                        ALR-56M</p> <p>(U) \$497                        Weapons Integration</p> <p>(U) \$1,963                    Commercial Central Interface Unit (CCIU)</p> <p>(U) \$4,970                    Complete Falcon STAR (Structural analysis and design)</p> <p>(U) \$87,478                    Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>Since the development activities in this PE support an operational aircraft, these development activities are funded in the Operational System Development budget activity 7.</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0207133F F-16 SQUADRONS</b>			<b>2671</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			113,959	81,338	71,872		TBD			
(U)	Appropriated Value			115,097	83,338						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-1,138	-899						
	b. Small Business Innovative Research			-3,573							
	c. Omnibus or Other Above Threshold Reprogram				-800						
	d. Below Threshold Reprogram			-2,828							
	e. Rescissions			-523							
(U)	Adjustments to Budget Years Since FY 2003 PBR					15,606					
(U)	Current Budget Submit/FY 2004 PBR			107,035	81,639	87,478		TBD			
<b>(U) Significant Program Changes:</b>											
FY03: \$2,000 Blk 40 AAI Congressional Plus Up											
FY04: \$15,606 continues Operation Flight Programs (OFPs) development for the F-16 Block 40/42 and 50/52											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Aircraft Procurement (3010F), Line Item 5; F-16 C/D (MYP)	0	0	0	0	0	0				TBD
(U)	Aircraft Procurement (3010F), Line Item 34, F-16 Mods	216,681	276,024	300,596	277,006	293,803	251,044	255,688	229,688		TBD
(U)	Aircraft Procurement (3010F), Line Item 73, Post Production Support	14,147	14,110	13,871	11,961	17,747	11,820	17,179	18,781		TBD

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>February 2003</b>																																																																																																						
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207133F F-16 SQUADRONS</b>					PROJECT <b>2671</b>																																																																																																						
<p>(U) <b><u>E. Acquisition Strategy</u></b>                  RDT&amp;E funds will primarily be executed in developing improved capability, maintenance and safety mods. Operational Flight Program (OFP) software will be continuously updated to complement mod development efforts. The approach to contracting varies by individual project. Lockheed Martin Aeronautics Company (LM Aero) is the prime contractor on all systems except the simulator/trainer (Hughes Co.), the 110 Engines (General Electric), and the 229 Engines (Pratt &amp; Whitney). Contract types are CPIF, CPFF, FFP.</p>																																																																																																																
<p>(U) <b><u>F. 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 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> <th colspan="3" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Contract Milestone</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) Complete Block 50 HTS/TGP Capability</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) Complete Falcon STAR</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 Block 40 MMC/Color Display</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) Complete Block 40 Link 16/JHMCS</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) Distributed Training Centers</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> <p>* - Completed Activiy                  X - Plan Start/Completion Date</p>													<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Contract Milestone													(U) Complete Block 50 HTS/TGP Capability				*									(U) Complete Falcon STAR												X	(U) Complete Block 40 MMC/Color Display				*									(U) Complete Block 40 Link 16/JHMCS				*									(U) Distributed Training Centers											X	
	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>																																																																																																									
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Project 2671			Page 5 of 7 Pages			Exhibit R-2 (PE 0207133F)																																																																																																										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207133F F-16 SQUADRONS			PROJECT 2671		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Link 16 Block 40/50					4,795		0		0
(U)	MMC Block 40					7,850		0		0
(U)	Color Display Block 40					3,230		0		0
(U)	JHMCS Block 40/50					4,188		0		0
(U)	Block 40 AAI Congressional Plus Up					0		1,978		0
(U)	Commercial Central Interface Unit					0		0		1,963
(U)	OFP Updates (Includes AAI)					47,590		49,897		47,415
(U)	Flight Tests DT&E					28,172		24,167		32,136
(U)	ALR-56M					0		468		497
(U)	Weapons Integration					0		468		497
(U)	Block 50 HTS/TGP Capability (Software development, design, test assets)					1,228		0		0
(U)	Falcon STAR (Structural analysis and design)					6,000		4,661		4,970
(U)	Distributed Training Centers					3,982		0		0
(U)	Total					107,035		81,639		87,478
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Link 16 Blk 40 (LM Aero)	SS/CPIF	Apr 98	20,281	20,281	7,252	4,795	0	0	0	12,047
MMC Blk 40 (LM Aero)	SS/CPIF	Apr 98	26,483	26,483	12,800	7,850	0	0	0	20,650
CMFDS Blk 40 (LM Aero)	SS/CPIF	Apr 98	8,674	8,674	5,505	3,230	0	0	0	8,735
JHMCS Blk 40 (LM Aero)	SS/CPIF	Apr 98	14,209	14,209	2,205	4,188	0	0	0	6,393
OFP Updates (LM Aero)	CPIF/T&M	Dec 95			153,746	47,590	49,897	47,415	Continuing	TBD
Block 50 HTS/TGP			5,967	5,967	0	1,228	0	0	0	1,228

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207133F F-16 SQUADRONS</b>				<b>2671</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Product Development Organizations</u>										
Falcon STAR	FFP	Mar 01	17,500	17,500	0	6,000	4,661	4,970	0	15,631
ALE-50			1,400	1,400	1,400	0	0	0	0	1,400
CCIU			0	0	0	0	0	1,963	0	1,963
ALR-56M			0	0	0	0	468	497	0	965
Weapons Integration			0	0	0	0	468	497	0	965
AAI Block 40 Congressional							1,978		0	1,978
Plus Up										
<u>Support and Management Organizations</u>										
Radar Eval					280	0	0	0	0	280
Halon Eval					40	0	0	0	0	40
<u>Test and Evaluation Organizations</u>										
600 Gallon Tank					2,296	0	0	0	0	2,296
Distributed Training Centers						3,982				3,982
Flight Tests						28,172	24,167	32,136	Continuing	TBD
						<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
						<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Subtotals</u>										<u>Total</u>
Rescission										
Subtotal Product Development					182,908	74,881	57,472	55,342	TBD	TBD
Subtotal Support and Management					320	0	0	0	0	320
Subtotal Test and Evaluation					2,296	32,154	24,167	32,136	TBD	TBD
Total Project					185,524	107,035	81,639	87,478	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207134F F-15E SQUADRONS					PROJECT 0131	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
0131	Initial Operational Test and Evaluation	100,003	60,363	112,085	115,547	96,853	100,335	98,130	99,422	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: In FY 2004, Project 670131, TISS technology Insertion Program (TTIP) includes new start efforts.

(U) **A. Mission Description**  
 The F-15E is the most versatile fighter in the world today. Configured with conformal fuel tanks (CFTs), the F-15E can deploy worldwide with minimal tanker support and arrive combat-ready. The F-15E retains air superiority capability and adds systems, such as Low Altitude Navigation and Targeting Infrared for Night (LANTIRN), to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. The F-15E's avionics, armament, airframe, and engines must be improved to maintain its superiority against the threat into the next century. The threat includes a new generation of aircraft possessing all-weather detection and kill capabilities. Avionics updates (exploiting proven technological advances) will be incorporated into the F-15E providing expanded capability and supporting an updated and fully integrated electronic warfare suite. This will increase the offensive and defensive capability and survivability of the F-15E. The F-15E PE also funds RDT&E activities for PE 0207130F, F-15A-D.

The FY02 Block Upgrade Program is funded by a one-year Congressional add but will be performed over 2 years.

Note: FY04 funding increase due to new start for TISS Technology Insertion Program, increase in OFP development and test activities, flight test infrastructure upgrade, and increase in flight test costs.

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$0 ACCOMPLISHMENTS/PLANNED PROGRAM  
 (U) \$35,716 Continue OFP development efforts.  
 (U) \$19,917 Continue flight testing of improvements initiated in prior years.  
 (U) \$23,941 Continue development of ADCP (formerly OFP effort).  
 (U) \$11,422 Complete integration of the Smart Weapons.  
 (U) \$882 Continue integration of the JHMCS.  
 (U) \$6,931 Initiate F-15 Block Upgrade Program. (FY02 Congressional Add.)  
 (U) \$1,194 Complete development of the ECCM.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>			
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0207134F F-15E SQUADRONS</b>			
		<b>PROJECT</b> <b>0131</b>			
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands) Continued</u></b>					
<b>(U)</b>	\$100,003	Total			
.					
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	ACCOMPLISHMENTS/PLANNED PROGRAM			
<b>(U)</b>	\$33,440	Continue OFP development efforts.			
<b>(U)</b>	\$11,124	Continue flight testing of improvements initiated in prior years.			
<b>(U)</b>	\$15,414	Continue development of ADCP (formerly OFP effort).			
<b>(U)</b>	\$385	Complete integration of JHMCS.			
<b>(U)</b>	\$60,363	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	ACCOMPLISHMENTS/PLANNED PROGRAM			
<b>(U)</b>	\$7,065	Continue development of ADCP (formerly OFP effort).			
<b>(U)</b>	\$7,900	Initiate TISS Technology Insertion Program (TTIP)			
<b>(U)</b>	\$72,518	Continue OFP development efforts.			
<b>(U)</b>	\$24,602	Continue flight test of improvements initiated in prior years.			
<b>(U)</b>	\$112,085	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
The F-15E, which received contract award approval in FY84, is an operational aircraft and therefore the development activities in the Program Element are included in Budget Activity 7, Operational Systems Development.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
<b>(U)</b>	Previous President's Budget	107,376	81,726	106,280	TBD
<b>(U)</b>	Appropriated Value	108,439	81,726		
<b>(U)</b>	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,063	-863		
	b. Small Business Innovative Research	-3,181			
<b>Project 0131</b>		Page 2 of 7 Pages		Exhibit R-2 (PE 0207134F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0207134F F-15E SQUADRONS</b>				<b>0131</b>			
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>				<u>Total Cost</u>	
	c. Omnibus or Other Above Threshold Reprogram				-800						
	d. Below Threshold Reprogram			-2,888							
	e. Rescissions			-487							
(U)	Adjustments to Budget Years Since FY 2003 PBR			-817	-19,700	5,805					
(U)	Current Budget Submit/FY 2004 PBR			100,003	60,363	112,085				TBD	
<b>(U) Significant Program Changes:</b>											
Funding (FY03):											
FY03 increase to JHMCS for completion of integration effort. Increase covers Award Fee and addition of -22EU configuration.											
The FY03 PB submission listed an FY03 new start for an ALR-56C Upgrade Program. This new start has been cancelled because of higher Air Force priorities. The upgrade will be addressed in future budget deliberations.											
FY03 decrease to fund other AF/DoD requirements. Program realignments as follows: OFP development from \$36,590 to \$33,440; Flight Test from \$16,764 to \$11,124; ADCP from \$21,372 to \$15,414; ALR-56C from \$7,000 to \$0; and JHMCS from \$0 to \$385.											
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Aircraft Procurement (3010F), Line Item 5, F-15E (PE27134F) [BP 10]										
(U)	Aircraft Procurement	240,037	272,587	189,810	113,466	129,000	67,003	10,129	5,764	Continuing	TBD
	(3010F), Line Item 27, F-15A-E (PEs 27130F and 27134F) [BP 11]										



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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207134F F-15E SQUADRONS</b>	<b>PROJECT</b> <b>0131</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement (3010F), Line Item 27, F-15 (PE27442F) [IDECM]					21,277	21,743	22,300	22,673	Continuing	TBD
(U) Aircraft Procurement (3010F) F-15E (PE84731F) General Skills Training [BP11]		1,263								1,263
(U) Aircraft Procurement (3010F) F-15 (PE27434F) Link 16 Support and Sustainment [BP11]			40							
(U) Aircraft Procurement (3010F) F-15E (PE89731F) Training Support to Units [BP11]	511				2,065	1,261			Continuing	TBD
(U) Aircraft Procurement (3010F), Line Item 66, F-15A-E [BP 13]	7,228	7,464	7,292	7,408	7,806	7,969			Continuing	TBD
(U) Aircraft Procurement (3010F) F-15E (PE27445F) Fighter Tactical Data Link [BP11]			7,755	70,667	66,666	40,388				

**(U) E. Acquisition Strategy**

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0207134F F-15E SQUADRONS</b>					<b>0131</b>			
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) Smart Weapons DT&E start	*												
(U) Smart Weapons DT&E complete					*								
(U) OFP Suite 4 complete		*											
(U) OFP Suite 5 Phase I complete				*									
(U) OFP Suite 5 Phase II start				*									
(U) OFP Suite 5 DT&E - start										X			
(U) OFP Suite 5 DT&E - complete												X	
(U) OFP Suite 5 CDR-MSIP								X					
(U) OFP Suite 5 CDR-E						X							
(U) ADCP Force Development Evaluation Start							X						
(U) ADCP P3I Start									X				
(U) ADCP Force Development Evaluation Complete									X				
(U) JHMCS OT&E complete	*												
(U) ECCM EMD complete						X							
(U) OFP Suite 6 Phase 1 Start									X				
(U) ADCP P3I complete										X			
(U) F-15 Block Upgrade Program Start				*									
(U) Flight Test Radar Instrumentation Upgrade Start											X		
(U) Flight Test Radar Instrumentation Upgrade Complete												X	
(U) TISS Replacement EMD start										X			
Note: ECCM EMD complete date slipped from 4th Qtr FY02 to 2nd Qtr FY03 due to higher Air Force priority funding realignments.													
* - Completed Activity													
X - Planned Start/Completion Date													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207134F F-15E SQUADRONS			PROJECT 0131		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	OFF					35,716		33,440		72,518
(U)	Flight Test					19,917		11,124		24,602
(U)	Advance Display Core Processor (ADCP)					23,941		15,414		7,065
(U)	Smart Weapons					11,422		0		0
(U)	Joint Helmet Mounted Cueing System					882		385		0
(U)	ECCM					1,194		0		0
(U)	F-15 Block Upgrade Program					6,931		0		0
(U)	TISS Technology Insertion Program (TTIP)					0		0		7,900
(U)	Total					100,003		60,363		112,085
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
P&W (-229 Eng)	CPAF	Sep 94	6,520	6,520	6,520	0	0		0	6,520
GE (-129 Eng)	CPAF	Feb 95	7,130	7,130	7,130	0	0		0	7,130
Boeing (GFE/GFP)	FFP	Dec 93	1,975	1,975	1,975	0	0		0	1,975
OFF Suite 4/5/6/7 Development	CPAF	May 98	339,808	339,808	148,297	35,716	33,440	72,518	Continuing	TBD
Boeing APG63 (Feasibility Study)	CPFF	Feb 94	778	778	778	0	0		0	778
(Risk Reduction)	CPFF	Feb 94	9,892	9,892	9,892	0	0		0	9,892
(EMD)	CPAF	Sep 94	223,033	223,033	223,033	0	0		0	223,033
Boeing (JHMCS A-D)	CPAF		11,358	11,358	9,483	882	385		0	10,750
PACS Upgrade	CPAF	May 95	28,343	28,343	28,343	0	0		0	28,343

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)									DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0207134F F-15E SQUADRONS</b>					<b>0131</b>	
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
Wright Lab (DMS)	MIPR/PRs	Sep 94	81,348	81,348	29,006	0	0	0	29,006	
Smart Weapons Integration	CPAF	Feb 99	51,607	51,607	3,507	11,422	0	0	14,929	
ADP(E)	CPAF	Jan 99	4,356	4,356	2,846	0	0	0	2,846	
ADCP(E)	CPAF	Jan 00	108,522	108,522	0	23,941	15,414	7,065	46,420	
NGA (ALQ-135 Band 1.5)	FFP	May 97	39,384	39,384	35,440	0	0	0	35,440	
Link-16 Data Link	CPAF	Apr 98	19,400	19,400	19,400	0	0	0	19,400	
Combat ID	CPAF	May 98	14,109	14,109	1,790	0	0	0	1,790	
TISS Replacement	CPFF	Aug 97	4,896	4,896	3,560	0	0	7,900	11,460	
Boeing/Raytheon ECCM	CPAF	Jan 00	15,000	15,000	0	1,194	0	0	1,194	
BOL Dispenser	CPFF	Jun 01	7,118	7,118	0	0	0	0	0	
F-15 Block Upgrade Program	CPAF	May 02	0	0	0	6,931	0	0	6,931	
<u>Support and Management Organizations</u>										
(Msn Spt) Misc.					16,708	0	0	0	16,708	
<u>Test and Evaluation Organizations</u>										
Boeing (Flt Test)	FFP	Oct 96	123,434	123,434	51,815	11,917	8,124	18,602	Continuing	TBD
Edwards	PO	Oct 96	91,048	91,048	41,562	7,000	0	0	Continuing	TBD
Eglin (Flt Test)	PO	Oct 96	21,667	21,667	12,210	1,000	3,000	6,000	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					531,000	80,086	49,239	87,483	TBD	TBD
Subtotal Support and Management					16,708	0	0	0	0	16,708
Subtotal Test and Evaluation					105,587	19,917	11,124	24,602	TBD	TBD
Total Project					653,295	100,003	60,363	112,085	TBD	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207136F Manned Destructive Suppression</b>						<b>PROJECT</b> <b>4595</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4595	F-16 Smart Targeting and Identification via Networked Geolocation (STING)	20,630	22,910	20,633	10,320	7,901	0	0	0	0	153,108
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

In FY 2002, Project 4595 was renamed Smart Targeting and Identification via Networked Geolocation (formerly HARM Targeting System). This action did not change program content.

**(U) A. Mission Description**

The overall Manned Destructive Suppression (MDS) program funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 aircraft with the ability to employ the AN/ASQ-213 Pod. This RDT&E effort continues preplanned product improvements (P3I) and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program. In FY00, P3I development of HTS Revision 7 (R7) began to address evolving threats and to incorporate a precision geolocation capability to target Precision Guided Munitions (PGMs) into the AN/ASQ 213 Pod. To better describe the capability to target PGMs as well as the HARM missile, the HTS R7 P3I program was renamed STING (Smart Targeting and Identification via Networked Geolocation). In FY01, the R7 P3I Program Definition and Risk Reduction (PDRR) was completed and the contract was awarded for System Development and Demonstration (SDD). The STING (R7) SDD effort in FY02 included a preliminary design review, integration efforts for F-16 software, critical design review, and flight test planning. FY03 marks the start of STING (R7) flight test activities. STING (R7) developed changes will also enable the F-16 to carry both an AN/ASQ-213 STING (R7) Pod and an Advanced Targeting Pod (ATP), by relocating STING (R7) pod to the aircraft's left inlet hard point. These improvements represent the Air Force's near-term solution (capability can be transferred to JSF, UCAV, or a yet defined system) for reactive time critical targeting for the DEAD mission. STING (R7) will target the Joint Standoff Weapon (JSOW) and potentially target other PGMs to destroy fixed and mobile enemy air defense elements. STING (R7) precision coordinates will be available to all Joint Forces via Link-16.

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$19,176 Continue STING (R7) Geolocation Upgrade Development
- (U) \$100 Continue STING (R7) Upgrade Test and Evaluation Support
- (U) \$1,354 Continue Mission Support

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207136F Manned Destructive Suppression</b>		<b>4595</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2002 (\$ in Thousands) Continued</u></b>					
<b>(U)</b>	\$20,630	Total			
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	Accomplishments/Planned Program			
<b>(U)</b>	\$18,435	Continue STING (R7) Geolocation Upgrade Development			
<b>(U)</b>	\$2,910	Continue STING (R7) Upgrade Test and Evaluation Support			
<b>(U)</b>	\$1,565	Continue Mission Support			
<b>(U)</b>	\$22,910	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	Accomplishments/Planned Program			
<b>(U)</b>	\$13,803	Continue STING (R7) Geolocation Upgrade Development			
<b>(U)</b>	\$5,302	Continue STING (R7) Upgrade Test and Evaluation Support			
<b>(U)</b>	\$1,528	Continue Mission Support			
<b>(U)</b>	\$20,633	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This PE is in Budget Activity 7 - Operational System Development because it supports preplanned product improvements and upgrade development of F-16 HTS (R6), a fielded system, to the STING (R7) configuration.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
<b>(U)</b>	Previous President's Budget	22,017	23,699	14,341	
<b>(U)</b>	Appropriated Value	22,239	23,699		
<b>(U)</b>	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-222	-250		
	b. Small Business Innovative Research	-717			
	c. Omnibus or Other Above Threshold Reprogram		-539		
	d. Below Threshold Reprogram	-568			
	e. Rescissions	-102			
Project 4595		Page 2 of 6 Pages	Exhibit R-2 (PE 0207136F)		

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207136F Manned Destructive Suppression</b>	<b>PROJECT</b> <b>4595</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Adjustments to Budget Years Since FY 2003 PBR			6,292	
(U) Current Budget Submit/FY 2004 PBR	20,630	22,910	20,633	153,108

(U) **Significant Program Changes:**

Adjustments in FY04 required to support a schedule shift in F-16 integration to maintain the same level of risk on the STING (R7) SDD contract and to cover increased flight testing cost.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) HTS Aircraft Procurement (BP11)AF PE 0207136F	0	0	0	13,681	15,716	5,094	0	0		34,491
(U) HTS Aircraft Procurement (BP19)AF PE 0207136F	0	0	4,819	20,336	21,524	9,548	9,625	9,607		75,459

(U) **E. Acquisition Strategy**

The STING (R7) program objective is to develop precision geolocation capability that significantly improves speed and accuracy of emitter targeting solutions on F-16 Block 50/52 aircraft. Precision geolocation capability will permit targeting of PGMs such as JSOW, in addition to the HARM missile, against mobile and fixed sites. The objective will be accomplished through study, risk reduction, and a System Development and Demonstration (SDD) effort leading to significant upgrades and increases in the F-16's and Joint Forces' reactive time critical targeting for Destruction of Enemy Air Defenses (DEAD) with JSOW and other PGMs.

(U) **F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) R6 Fielding Completed (December 2001)	*											
(U) R6 Lot 2 Pod Deliveries Complete (16 Pods)		*										
(U) R6 Lot 3 Pod Deliveries Complete (13 Pods)			*									
(U) R6 Lot 4 Pod Deliveries ( 31 Pods)				*								



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003						
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT						
<b>07 - Operational System Development</b>					<b>0207136F Manned Destructive Suppression</b>					<b>4595</b>						
<b>(U) F. Schedule Profile Continued</b>																
					<u>FY 2002</u>					<u>FY 2003</u>		<u>FY 2004</u>				
					1	2	3	4	1	2	3	4	1	2	3	4
<b>(U) STING (R7) Test Program Begins</b>										X						
* = Completed Event					X = Planned Event											
Project 4595				Page 4 of 6 Pages				Exhibit R-2 (PE 0207136F)								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207136F Manned Destructive Suppression			PROJECT 4595			
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	STING (R7) Geolocation Dev (Includes R7/ATP Dual Carriage)					19,176		18,435		13,803	
(U)	Test & Evaluation Support					100		2,910		5,302	
(U)	Mission Support					1,354		1,565		1,528	
(U)	Total					20,630		22,910		20,633	
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Raytheon Systems Co.	SS/Various	Various	63,404	63,404	22,525	18,963	18,116	15,978	8,509	84,091
	Raytheon Systems Co.	SS/CPAF	Feb 96	31,331	31,331	31,331					31,331
	AFMSS	SS/CPIF	Various	1,885	1,885	1,885	213	333	306	246	2,983
	Lockheed/Ft Worth	SS/FFP	Various	2,400	2,400	2,400					2,400
<u>Support and Management Organizations</u>											
	Prog. Mgt. and Mission Support	Various	Various			5,057	1,354	1,551	1,523	3,285	12,770
<u>Test and Evaluation Organizations</u>											
	Eglin	PO	Various			2,175					2,175
	Edwards	PO	Various			4,419	100	2,910	2,826	6,181	16,436
	Light Defender		Various			922					922
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
Project 4595											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207136F Manned Destructive Suppression			PROJECT 4595		
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
Not Applicable									
<u>Test and Evaluation Property</u>									
Not Applicable									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				58,141	19,176	18,449	16,284	8,755	120,805
Subtotal Support and Management				5,057	1,354	1,551	1,523	3,285	12,770
Subtotal Test and Evaluation				7,516	100	2,910	2,826	6,181	19,533
Total Project				70,714	20,630	22,910	20,633	18,221	153,108

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207138F F-22 SQUADRONS					PROJECT 4785	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4785	F-22	0	66,323	315,784	375,428	411,671	640,691	612,655	561,324	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b></p> <p>The F/A-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F/A-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F/A-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition. The Defense Acquisition Board (DAB) approved Low Rate Initial Production (LRIP) Aug 01. This exhibit is for post EMD requirements/developments - which includes hardware and software enhancements to the EMD baseline. These enhancements will upgrade the F/A-22 to enable a more robust air-to-ground target engagement capability.</p> <p>This program is in Budget Activity 7, Operational System Development, because the F/A-22 Program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishment/Planned Program</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 Accomplishment/Planned Program</p> <p>(U) \$60,196 Initiate requirements definition and spiral development activities for planned hardware and software capability upgrades. (NSP)                      --Initiate Spiral 2 to develop Global Strike Task Force basic capabilities.                      --Initiate Spiral 3 to develop Global Strike Task Force enhanced capabilities.</p> <p>(U) \$3,627 Initiate Air Vehicle Instrumentation support (SEEK EAGLE Instrumentation).</p> <p>(U) \$2,500 Initiate Post-EMD System Engineering/Program Management Contract Support</p> <p>(U) \$66,323 Total</p>											
Project 4785			Page 1 of 6 Pages				Exhibit R-2 (PE 0207138F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207138F F-22 SQUADRONS</b>		<b>4785</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
(U)	\$0	Accomplishment/Planned Program			
(U)	\$231,014	Continue spiral development activities for planned hardware and software capability upgrades. (NSP) --Continue Spiral 2 to develop Global Strike Task Force basic capabilities. --Continue Spiral 3 to develop Global Strike Task Force enhanced capabilities.			
(U)	\$19,000	Continue Air Vehicle Instrumentation support (SEEK EAGLE Instrumentation).			
(U)	\$6,270	Initiate Air Vehicle Instrumentation support (Test Instrumentation)			
(U)	\$5,000	Continue spiral development Post-EMD System Engineering/Program Management Contract Support.			
(U)	\$51,000	Continue flight test and flight test support at Edwards AFB. (NSP)			
(U)	\$3,500	Mission support of the SPO; travel, computer costs, misc contracts, etc.			
(U)	\$315,784	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in Budget Activity 7, Operational System Development, because the F/A-22 Program is developing the next-generation air dominance fighter for the USAF to counter emerging worldwide threats.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	0	181,239	227,296	TBD
(U)	Appropriated Value	0	181,239		0
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-1,916		-1,916
	b. Small Business Innovative Research				0
	c. Omnibus or Other Above Threshold Reprogram		-113,000		-113,000
	d. Below Threshold Reprogram				0
	e. Rescissions				0
(U)	Adjustments to Budget Years Since FY 2003 PBR			88,488	88,488
(U)	Current Budget Submit/FY 2004 PBR	0	66,323	315,784	TBD

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207138F F-22 SQUADRONS</b>	PROJECT <b>4785</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) **Significant Program Changes:**

Modernization Acquisition Strategy was changed from block to spiral development to reflect the F/A-22 Program's Global Strike Task Force requirements.

EMD budget was increased in FY03 and FY04 to fund the increase in EMD Estimate at Completion. The already submitted Above Threshold Reprogramming for FY03 reprograms FY03 RDT&E Modernization funds (PE 27138F) and Production funds (PE 27218F) to complete this action. For FY04, USAF internally funded the EMD increase within F/A-22 Total Obligation Authority (TOA) by realigning F/A-22 Production funds (PE 27119F).

Additional funding (FY04) for Spiral development to support enhanced GSTF capabilities.

All Auto Ground Collision Avoidance System (AGCAS) funding in FY04 and out was removed.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	728,403	839,635	620,740	210,000	76,000					24,085,499
(U) {PE 64239F}										
(U) PRTV II (6)	148,870									1,580,580
(U) F/A-22 Squadrons Procurement (PE 0207138F)		16,027	41,276	71,691	10,100	76,586	134,697	167,108	Continuing	TBD
(U) Military Construction (PE 0604239F)	0	0	0	0	0	0	0	0	0	39,700
(U) Military Construction (PE 0207219F)	53,442	42,790	0	0	0	0	0	0	0	96,232
(U) Military Construction (PE 0207138F)			31,164	40,246	60,070	96,030	148,700	93,090	Continuing	TBD
(U) Aircraft Procurement (PE 0207219F) Advanced Tactical Fighter, P-1 Line Item #003**	3,022,659	4,470,117	4,220,552	4,456,732	4,133,179	4,224,841	4,088,173	3,910,350	5,899,334	42,120,631

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207138F F-22 SQUADRONS					PROJECT 4785	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Munitions Procurement (PE 0207219F)	4,311	6,260	9,480	9,433	10,922	10,771	12,027	12,253	24,726	102,057
(U) F/A-22 Link 16 Transmit Procurement (PE 27445F)					26,483	27,541	31,971	32,518	127,270	245,783
**NOTE: Includes BP10, 11, 16, 19 and Advance Buy.										
<b>(U) E. Acquisition Strategy</b>										
Delivery Order on Raptor Enhancement Development Integration (REDI) Contract to accomplish requirement definition and spiral development activities. Planned development and test will be on a separate delivery order to be executed in the FY05 and beyond timeframe.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3
(U) Initiate Spiral development activities for planned upgrades										X
(U) Initiate Air Vehicle Instrumentation support (SEEK EAGLE Instr.)										X
(U) Initiate Air Vehicle Instrumentation support (Test Instrumentation)										X
(U) Initiate Post-EMD System Engnrng/Program Management contract support										X
(U) Initiate Other Government Costs										X
* - Completed										
X - Planned										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>				<b>0207138F F-22 SQUADRONS</b>			<b>4785</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Initiate spiral development activities for planned hardware and software capability upgrades.						60,196			231,014
(U)	Air Vehicle Instrumentation support (SEEK EAGLE Instr.)						3,627			19,000
(U)	Air Vehicle Instrumentation support (Test Instr.)						0			6,270
(U)	Post-EMD System Engineering/Program Management contract support						2,500			5,000
(U)	Other Government Costs									
(U)	- Government Test									51,000
(U)	- Mission Support									3,500
(U)	Total						66,323			315,784
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Spiral development activities	Cost Plus	3QFY03					60,196	231,014	Continuing	TBD
Air Vehicle Instrumentation support (SEEK EAGLE Instr)	Cost Plus	3QFY03					3,627	19,000	Continuing	TBD
Air Vehicle Instrumentation support (Test Instrumentation)	Cost Plus	3QFY03					0	6,270	Continuing	TBD
System Engineering / Program Management	Cost Plus						2,500	5,000	Continuing	TBD
<u>Support and Management Organizations</u>										
Support Contracts								1,300	Continuing	TBD
In House Support								2,200	Continuing	TBD



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207138F F-22 SQUADRONS			PROJECT 4785		
(U) <b>Performing Organizations Continued:</b>									
<u>Test and Evaluation Organizations</u>									
AFFTC							51,000	Continuing	TBD
(U) <b>Government Furnished Property:</b>									
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>								
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
Not Applicable									
<u>Test and Evaluation Property</u>									
Not Applicable									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						66,323	261,284	TBD	TBD
Subtotal Support and Management							3,500	TBD	TBD
Subtotal Test and Evaluation							51,000	TBD	TBD
Total Project						66,323	315,784	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207141F F-117A SQUADRON</b>					PROJECT <b>3956</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3956	F-117A Stealth Fighter	2,139	3,417	14,752	31,539	57,069	47,021	31,574	1,630	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b></p> <p>NOTE: In FY 2004, Combat Capability Sustainment Program (CCSP) includes Expanded Data Transfer System (EDTS) and Brooklyn Bridge New Start efforts.</p> <p>The F-117 is the world's first operational low-observable (LO) combat aircraft. Its combination of stealth and precision weapons delivery capability allows the United States Air Force to hold even the most highly defended targets at risk. The program completed production in Jul 1990 with the delivery of the final F-117 (number 59). The single operational F-117 unit is the 49th Fighter Wing stationed at Holloman AFB, NM. The program is now primarily engaged in modernization and sustainment activities for the F-117, which is projected to remain in service through at least 2018.</p> <p>This project provides research and development funding for multiple modifications to the F-117 weapon system to enhance combat capability while improving safety, reliability and supportability. The MIL-STD-1760 Stores Management Processor (SMP) modification, which completed development in May 01, is an essential prerequisite for integration of advanced weapons on the F-117. Development efforts continue for Smart Weapons Integration. The current program implements full three weapons capability to include EGBU-27, JDAM and WCMD. System Development &amp; Demonstration (SDD) started in FY01.</p> <p>The Combat Capability Sustainment Program (CCSP) replaces obsolete avionics systems, establishes new vendors and improves reliability and maintainability to keep the F-117 operational through its service life. CCSP began Concept &amp; Technology Development (CTD) in FY00 with Congressional Add funding. Beginning in FY2004, System Development &amp; Demonstration (SDD) starts for Expanded Data Transfer System (EDTS) and Brooklyn Bridge. EDTS is the system that allows data to be transferred from the mission planning environment to the aircraft for operations. The Brooklyn Bridge consists of the F-117 outboard elevon actuator support structure.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$2,139 Continue SDD for Smart Weapons Integration</p> <p>(U) \$2,139 Total</p>											
Project 3956			Page 1 of 5 Pages				Exhibit R-2 (PE 0207141F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207141F F-117A SQUADRON</b>	PROJECT <b>3956</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$3,417 Continue SDD for Smart Weapons Integration</p> <p>(U) \$3,417 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$9,905 Continue SDD for Smart Weapons Integration</p> <p>(U) \$4,634 Initiate SDD for CCSP Expanded Data Transfer System (EDTS)</p> <p>(U) \$213 Initiate SDD for Brooklyn Bridge</p> <p>(U) \$14,752 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 all aircraft have been delivered and the program is in its deployment phase.</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 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">2,305</td> <td style="text-align: right;">3,525</td> <td style="text-align: right;">10,059</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">2,305</td> <td style="text-align: right;">3,525</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: right;">-23</td> <td style="text-align: right;">-37</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-74</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: right;">-59</td> <td style="text-align: right;">-71</td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: right;">-10</td> <td></td> <td style="text-align: right;">4,693</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">2,139</td> <td style="text-align: right;">3,417</td> <td style="text-align: right;">14,752</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> FY04 funding adjustments due to New Start System Development &amp; Demonstration for EDTS and Brooklyn Bridge.</p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	2,305	3,525	10,059	TBD	(U) Appropriated Value	2,305	3,525			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-23	-37			b. Small Business Innovative Research	-74				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-59	-71			e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR	-10		4,693		(U) Current Budget Submit/FY 2004 PBR	2,139	3,417	14,752	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
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Project 3956	Page 2 of 5 Pages	Exhibit R-2 (PE 0207141F)																																																							

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207141F F-117A SQUADRON</b>	<b>PROJECT</b> <b>3956</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) Aircraft Procurement (BA-5), Appn 3010/BP1100, AF F117A Squadrons, PE 27141F	26,939	20,341	16,790	23,219	20,663	22,209	85,611	79,788	Continuing	TBD
(U) Aircraft Procurement (BA-5), Appn 3010/BP1600, AF F117A Squadrons, PE 27141F	0	0	0	1,052	0	0	2,691	2,737	Continuing	TBD

**(U) E. Acquisition Strategy**

Lockheed Martin Aeronautics Company at Palmdale (LMAC-P) is the F-117 prime contractor and has Total System Support Partnership (TSSP) for the F-117 weapon system. Modification programs are sole source to LMAC-P as part of the larger TSSP effort. RDT&E funds are executed to develop improved capability, reliability, maintenance and safety modifications. Operational Flight Program (OFP) software is continuously updated as needed to complement modification development efforts. The contracting approach varies by individual effort and involves Cost Plus Fixed Fee (CPFF) and Cost Plus Award Fee (CPAF) contract types.

**(U) F. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Smart Weapons Integ-Full JDAM (CTD Sep 98-Nov 01)	*											
(U) Smart Weapons Integ Preliminary Design Review (PDR) (July 02)				*								
(U) Smart Weapons Integ Critical Design Review (CDR) (May 03)								X				
(U) CCSP Pre-SDD (CTD Phase 1 Jun 00-Dec 03)									X			
(U) CCSP SDD (EDTS Jan 04 - Sep 05)											X	
(U) Brooklyn Bridge SDD (Jan 04 - Sep 04)											X	

\* = Completed Effort  
X = Planned Effort

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207141F F-117A SQUADRON			PROJECT 3956		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Stores Management Processor (SMP) SDD									
(U)	Smart Weapons Integration CTD									
(U)	Smart Weapons Integration SDD				2,139		3,417			9,905
(U)	CCSP CTD									
(U)	CCSP EDTS SDD									4,634
(U)	Brooklyn Bridge SDD									213
(U)	Total				2,139		3,417			14,752
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Smart Wpn Integration SDD, CPAF Lockheed Martin, Palmdale CA		May 01	27,463	27,463	1,605	2,139	3,417	9,905	Continuing	TBD
CCSP CTD, Lockheed Martin, Palmdale CA	CPFF	Apr 00	7,284	7,284	7,284	0	0	0	Continuing	TBD
CCSP EDTS SDD, Lockheed Martin, Palmdale CA	CPFF	Jan 04	14,137	14,137	0	0	0	4,634	Continuing	TBD
Brooklyn Bridge SDD, Lockheed Martin, Palmdale CA	CPFF	Jan 04	217	217	0	0	0	213	0	213
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0207141F F-117A SQUADRON</b>			<b>3956</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	8,889	2,139	3,417	14,752	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	8,889	2,139	3,417	14,752	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207161F Tactical AIM Missiles					PROJECT 4132	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4132	AIM-9 Product Improvement	6,946	2,912	375	5,573	15,045	5,554	5,634	5,710	Continuing	TBD
	Quantity of RDT&E Articles	11	0	0	0	0	0	0	0	0	22

Note: The RDT&E articles are deliverables under the Engineering and Manufacturing Development (EMD) contract and are not separately priced. Quantities are delivered in the indicated Fiscal Years. Deliveries supported October 1999 restructured program.

(U) **A. Mission Description**  
 The AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X (Sidewinder) short range air-to-air missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common to the AIM-9M. Anti-Tamper features are being incorporated to protect improvements inherent in AIM-9X design. AIM-9X is an Acquisition Category IC (ACAT IC) joint-service program with Navy lead.

Status: Acquisition Decision Memorandum (ADM) for LRIP II & III was signed in November 2001. The joint flight test program has completed 18 unguided and 19 guided launches proving revolutionary capabilities well beyond the fielded AIM-9M. Operational Evaluation (OT) was to begin in 2nd quarter of FY02. Delays in the OT Test Plan approval and missile retrofits delayed the start to 4th quarter FY02.

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

(U) \$0	Accomplishments/Planned Program
(U) \$4,240	Continue the EMD contract to include completion of the DT Assist, start of OT-IIB and delivery of eleven test articles
(U) \$200	Continue providing aircraft interface support to the EMD contractor
(U) \$1,481	Continue providing government flight test support of activities defined as DT Assist (with operational testers) at multiple test sites
(U) \$330	Field engineering support for government flight test activities
(U) \$380	Provide program office management support to include supplies and travel
(U) \$315	Provide for consulting services, technical engineering, and management support
(U) \$6,946	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>0207161F Tactical AIM Missiles</b>		<b>4132</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$1,680	Continue the EMD contract to include correction of deficiencies found in OT, and EMD contract completion activities			
(U)	\$537	Continue providing government flight test support of activities defined as DT Assist (with operational testers) at multiple test sites			
(U)	\$495	Field engineering support for government flight test activities			
(U)	\$118	Provide program office management support to include supplies and travel			
(U)	\$82	Provide for consulting services, technical engineering, and management support			
(U)	\$2,912	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$211	Continue correcting deficiencies found in OT			
(U)	\$84	Field engineering support for correction of deficiencies found in OT			
(U)	\$80	Provide program office management support to include supplies and travel			
(U)	\$0	No Activity			
(U)	\$375	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
The program is currently in budget activity 7 - Operational System Development.					
The AIM-9X program entered OPEVAL in Aug 02.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	5,713	2,943	382	TBD
(U)	Appropriated Value	5,771	2,943		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-58	-31		
	b. Small Business Innovative Research	-186			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	1,453			
Project 4132		Page 2 of 6 Pages	Exhibit R-2 (PE 0207161F)		

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207161F Tactical AIM Missiles</b>	<b>PROJECT</b> <b>4132</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
e. Rescissions	-34			
(U) Adjustments to Budget Years Since FY 2003 PBR			-7	
(U) Current Budget Submit/FY 2004 PBR	6,946	2,912	375	TBD

(U) Significant Program Changes:

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) DOD PE (0603715D)										25,000
(U) Other APPN										
(U) Tactical AIM Missile Modification (BP21)										
(U) Tactical AIM Missile Procurement (BP20)	33,022	54,148	69,072	52,706	55,277	53,806	54,490	55,764	Continuing	Continuing
(U) SEEK EAGLE (PE 0207590F)	5,362	1,751	0	0	0	0				TBD

Congressional language directed the program to report as a missile procurement, starting in FY02, and not as a missile modification.

(U) **E. Acquisition Strategy**

After a full and open competition, a Cost Plus Incentive Fee/Award Fee contract was awarded to Hughes Missile Systems Company (now Raytheon Systems Corp (RSC)) to complete missile system development and prepare for production. This EMD contract includes three Fixed Price options for Low Rate Initial Production (LRIP) Lots 1, 2, and 3. The FY01 LRIP 1 option was exercised in Nov 2000, LRIP 2 option was exercised in Nov 2001 and LRIP 3 option was exercised in Nov 2002. The EMD contract and production options provide strong incentives for the contractor to control costs, achieve reliable performance, and deliver on schedule. The Acquisition Decision Memorandum (ADM) for LRIP 2 and 3 was signed in Nov 2001.

The Navy Acquisition Executive will make the Full Rate Production (FRP) decision with advice from the Air Force Acquisition Executive subsequent to the successful completion of the associated MS III exit criteria. FRP Lots 4 through 7 contracts will be Firm Fixed-Price (FFP) with incentives provided if the contractor meets or beats his Procurement Price Commitment Curve (PPCC), a quantity price curve provided by RSC with the EMD proposal. Rewards or penalties are provided depending on

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 2003																																																																																																																																				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																																																																																																																					
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<p>(U) <b><u>E. Acquisition Strategy Continued</u></b>                      RSC's performance relative to the PPCC. A Service review of RSC's Lot 4 through 7 proposals relative to the PPCC will be held prior to award of those contracts.</p> <p>(U) <b><u>F. Schedule Profile</u></b></p> <table border="0"> <thead> <tr> <th></th> <th colspan="4"><u>FY 2002</u></th> <th></th> <th colspan="4"><u>FY 2003</u></th> <th></th> <th colspan="4"><u>FY 2004</u></th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>(U) LRIP 2 Award</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) OT-IIB Starts</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) LRIP 3 Decision</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) LRIP 3 Award</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) OT-IIB Complete</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) RAA/IOC</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) Milestone 3</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) FRP Award (Lots 3-7)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> </tbody> </table> <p>* - Completed Events                      X - Planned Events</p>													<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) LRIP 2 Award	*												(U) OT-IIB Starts				*									(U) LRIP 3 Decision				*									(U) LRIP 3 Award					*								(U) OT-IIB Complete							X						(U) RAA/IOC										X			(U) Milestone 3										X			(U) FRP Award (Lots 3-7)											X	
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Project 4132			Page 4 of 6 Pages				Exhibit R-2 (PE 0207161F)																																																																																																																																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207161F Tactical AIM Missiles			PROJECT 4132		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Project Cost Categories									
(U)	a.	Primary Hardware Development				4,240		1,680		211
(U)	b.	Contractor Engineering Support (F-15 AIM-9X Aircraft Integration)				200		0		0
(U)	c.	Development and Test Evaluation				1,481		537		0
(U)	d.	Government Engineering Support				330		495		84
(U)	e.	Program Management (PMA)				380		118		80
(U)	f.	Contractor Services Support				315		82		0
(U)	Total					6,946		2,912		375
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Hughes	C/CPIF	Dec 94	5,694	5,694	5,694	0	0		0	5,694
Raytheon	C/CPIF	Dec 94	5,694	5,694	5,695	0	0		0	5,695
Raytheon	C/CPIF	Dec 96	136,930	136,930	83,855	4,206	1,680	211	Continuing	TBD
Boeing	C/CPIF	Jan 96	20,397	20,397	16,107	200	0	0		16,307
Engineering Services	Various	Various	N/A	N/A	14,162	330	495	84	Continuing	TBD
Program Management*	PO	Various	N/A	N/A	8,300	380	118	80	Continuing	TBD
Note*: Based on a Memorandum of Agreement, RDT&E program costs includes Navy PMA working capital funded personnel funded at 50%/50% ratio per Service.										
<u>Support and Management Organizations</u>										
Various Contracts	FFP	Various	N/A	N/A	1,811	315	82	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Field Activities	PO	Oct 96	N/A	N/A	12,235	1,515	537	0	Continuing	TBD

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

DATE February 2003

BUDGET ACTIVITY 07 - Operational System Development PE NUMBER AND TITLE 0207161F Tactical AIM Missiles PROJECT 4132

(U) Government Furnished Property:

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
N/A	N/A	N/A	N/A	0	0	0		0	0
<u>Support and Management Property</u>									
N/A	N/A	N/A	N/A	0	0	0		0	0
<u>Test and Evaluation Property</u>									
N/A	N/A	N/A	N/A	0	0	0		0	0
<u>Subtotals</u>				<u>Total Prior</u> <u>to FY 2002</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget</u> <u>FY 2004</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
Subtotal Product Development				133,813	5,116	2,293	375	TBD	TBD
Subtotal Support and Management				1,811	315	82	0	TBD	TBD
Subtotal Test and Evaluation				12,235	1,515	537	0	TBD	TBD
Total Project				147,859	6,946	2,912	375	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207163F Advanced Medium Range Air-to-Air Missile					PROJECT 3777	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3777	AMRAAM	53,529	35,537	32,429	33,353	35,251	36,205	36,726	37,218	0	753,983
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>                      The Air Force and Navy developed the baseline Advanced Medium Range Air-to-Air Missile (AMRAAM) as a high performance, all weather missile to counter existing air vehicle threats operating at high or low altitude and having advanced Electronic Protection (EP) capabilities. The AMRAAM Pre-Planned Product Improvement (P3I) program provides for a continuing, Joint Air Force/Navy research and development program which enables AMRAAM to: (1) be compatible with advanced fighters, (2) enhance AMRAAM capability and operational flexibility against mid-1990's and beyond threats, (3) incorporate high payoff technology developments, and (4) investigate variants and/or alternate missions which may use many baseline missile attributes. Currently, improvements under the P3I program include enhanced EP and electronic attack (EA) capabilities; improved weapon effectiveness through improved warhead, fuzing, and guidance; and increased kinematics. AMRAAM is a joint Air Force/Navy, Acquisition Category (ACAT) IC program with Air Force as lead service.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0 Accomplishments/Planned Program                      (U) \$51,221 Conduct P3I Phase 3 improved seeker and advanced EP updates : Perform tasks required to meet flight test requirements and to award the Phase 3 missile production contract.                      P3I Phase 3 ACE Flights: Conduct ACE Flights to evaluate hardware and software                      (U) \$893 Continue mission support: Provide program management to execute Phase 3 program                      (U) \$1,415 Continue test and evaluation: Provide Test Wing support to DOT&amp;E testing                      (U) \$53,529 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0 Accomplishments/Planned Program                      (U) \$34,230 Complete P3I Phase 3 improved seeker and advanced EP updates: Perform tasks required to complete EMD testing and verification.                      P3I Phase 3 Free Flight Tests: Conduct 8 free flight tests and associated analysis                      P3I Phase 3 Functional Configuration Audit: Conduct reviews and analysis required to release system to production                      (U) \$500 P3I Phase 3: Complete tasks required to award Phase 3 Software Upgrade Contract                      (U) \$559 Continue mission support: Provide program management to execute Phase 3 program</p>											
Project 3777				Page 1 of 5 Pages				Exhibit R-2 (PE 0207163F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																																																								
BUDGET ACTIVITY <b>07 - Operational System Development</b>		PE NUMBER AND TITLE <b>0207163F Advanced Medium Range Air-to-Air Missile 3777</b>																																																								
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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u></p> <p>(U) \$248 Continue test and evaluation: Provide Test Wing support to DOT&amp;E testing</p> <p>(U) \$35,537 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$4,500 P3I Phase 3: Continue P3I Phase 3 Software Upgrade</p> <p>(U) \$26,178 Conduct P3I Phase 3 Follow On: Conduct preliminary design review of guidance and kinematic improvements</p> <p>(U) \$1,231 Continue mission support: Provide program management to execute Phase 3 program</p> <p>(U) \$520 Continue test and evaluation: Provide Test Wing support to DOT&amp;E testing</p> <p>(U) \$32,429 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in budget activity 7 - Operational System Development, providing upgrades to the AIM-120C missile currently in production.</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 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">57,125</td> <td style="text-align: right;">37,008</td> <td style="text-align: right;">33,024</td> <td style="text-align: right;">693,833</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">57,702</td> <td style="text-align: right;">37,008</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: right;">-1,315</td> <td style="text-align: right;">-391</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: right;">-1,861</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-1,080</td> <td></td> <td></td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: right;">-997</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: right;">-595</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">53,529</td> <td style="text-align: right;">35,537</td> <td style="text-align: right;">32,429</td> <td style="text-align: right;">753,983</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p>					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	57,125	37,008	33,024	693,833	(U) Appropriated Value	57,702	37,008			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-1,315	-391			b. Small Business Innovative Research	-1,861				c. Omnibus or Other Above Threshold Reprogram		-1,080			d. Below Threshold Reprogram	-997				e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR			-595		(U) Current Budget Submit/FY 2004 PBR	53,529	35,537	32,429	753,983
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Project 3777		Page 2 of 5 Pages																																																								
		Exhibit R-2 (PE 0207163F)																																																								

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207163F Advanced Medium Range Air-to-Air Missile 3777</b>	<b>PROJECT</b> <b>3777</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement, Budget Activity #2, PE 0207163F, P-1 Line Item, AMRAAM	100,222	87,924	105,246	107,734	105,061	102,207	103,505	105,926		6,948,708
(U) Replenishment Spares, BP25 and Missile Replacement Equipment	1,253	240	188	270	193	193	195	200		61,443
(U) Initial Spares, BP26	6	89	72	72	72	72	72	74	0	63,332
(U) Seek Eagle	0	0	0	0	0	0	0	0	0	15,132

**(U) E. Acquisition Strategy**

The AMRAAM Pre-Planned Product Improvement (P3I) program takes advantage of emerging technologies to update and expand the system capabilities to meet new user requirements. The Phase 1 missile allows internal carriage on the F-22 and JSF with clipped wings and fins as well as providing some software enhancements. The Phase 2 AIM-120 C4 missile adds a new warhead which increases lethality and the AIM-120 C5 missile has a +5 inch rocket motor for kinematic improvements. The first Phase 2 AIM-120 C4 missile was delivered in Aug of FY99. The Phase 2 AIM-120 C5 missiles started delivery in Jul of FY00. The Phase 3 missile is the first major upgrade to the seeker hardware and software to meet performance requirements for the FY04 and out time-period. The Phase 3 Cost Plus Award Fee EMD contract was awarded in Oct FY99. This missile will begin deliveries in FY04. The follow-on to Phase 3, beginning in FY04, will result in improved guidance and kinematics.

**(U) F. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) P3I Phase 3 Seeker Critical Design Review (CDR)												
(U) P3I Phase 3 ACE Flights Complete												X
(U) P3I Phase 3 Test Readiness Review (TRR)							*					
(U) P3I Phase 3 Functional Configuration Audit (FCA)												X
(U) P3I Phase 3 Program Complete												X
(U) P3I Phase 3 Software Upgrade Award									X			
(U) P3I Phase 3 Follow On Contract Award											X	



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY						PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>						<b>0207163F Advanced Medium Range Air-to-Air Missile</b>				<b>3777</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>	<u>FY 2003</u>			<u>FY 2004</u>	
(U)	a.	Phase 3 EMD Improved Seeker and Advanced EP Updates				51,221	34,230				
(U)	b.	Phase 3 Software Upgrade					500			4,500	
(U)	c.	Phase 3 Follow on Improved Guidance and Kinematics								26,178	
(U)	c.	Gov Mission Support				893	559			1,231	
(U)	d.	Gov Test & Evaluation				1,415	248			520	
(U)		Total				53,529	35,537			32,429	
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
Misc. Contracts	SS/FFP	Annual	N/A	N/A	10,636	2,135	1,666	1,414	7,070	22,921	
F08635-90-C-0201 Hughes	SS/FFP	Aug 90	5,200	5,200	5,200	0			0	5,200	
F08626-91-C-0034 Hughes	SS/CPIF	Mar 91	93,506	93,506	93,506	0			0	93,506	
F08626-93-C-0044 (Phase 2) Hughes	SS/CPAF	Jun 94	117,558	117,558	117,558	0			0	117,558	
Phase 3 Risk Reduction	SS/CPAF	Oct 94	24,484	24,484	24,484	0			0	24,484	
Phase 3 Improved Fuzing Capability	SS/CPAF	Oct 98	3,937	3,937	3,937	0			0	3,937	
Phase 3 Improved Seeker and Advanced EP. Raytheon	SS/CPAF	Oct 98	200,121	200,121	118,471	49,086	32,564		0	200,121	
F08626-98-C-0027											
Phase 3 Software Upgrade	SS/CPAF	Jun 03	TBD	TBD	0	0	500	4,500	5,000	10,000	
Phase 3 EMD Follow on Contract	SS/CPAF	Oct 03	TBD	TBD	0	0	0	24,764	159,966	184,730	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE		
								February 2003		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207163F Advanced Medium Range Air-to-Air Missile</b>				<b>3777</b>		
<b>(U) Performing Organizations Continued:</b>										
*Note: Hughes became part of Raytheon Systems effective Dec 97										
<u>Support and Management Organizations</u>										
COEA	PO/MIPR	Jan 94	N/A	N/A	3,358			0	3,358	
Contractor Support	REO/PR	Annual	N/A	N/A	18,333	447	0	611	3,487	22,878
JSP0 Operations	PR/IMPAC	Annual	N/A	N/A	19,097	446	559	620	3,130	23,852
<u>Test and Evaluation Organizations</u>										
Government Test	REO/MIPR	Annual	N/A	N/A	36,775	1,415	248	520	100	39,058
<b>(U) 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>Obligation</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
TM/ECM Pods	REO/MIPR	Annual			2,380				0	2,380
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					373,792	51,221	34,730	30,678	172,036	662,457
Subtotal Support and Management					40,788	893	559	1,231	6,617	50,088
Subtotal Test and Evaluation					39,155	1,415	248	520	100	41,438
Total Project					453,735	53,529	35,537	32,429	178,753	753,983

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207247F Air Force TENCAP</b>					PROJECT <b>0001</b>		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
0001	Air Force TENCAP	11,856	15,066	10,479	10,701	10,800	10,985	11,143	11,292	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b></p> <p>The Air Force Tactical Exploitation of National Capabilities (AF TENCAP) program was established in 1977 per Congressional direction and is a non-traditional acquisition program. AF TENCAP pursues seamless integration of space systems capabilities into military operations for tactical use by warfighters, expediting improvements to Air Force combat capabilities through rapid-prototyping projects, operational concept demonstrations, and transitions to the warfighter customer. Additionally, AF TENCAP-developed equipment is deployed in support of real-world contingency operations.</p> <p>AF TENCAP leverages investments in space systems for tactical warfighter use in three ways:</p> <ol style="list-style-type: none"> <li>1) Exploiting existing space systems for tactical applications, conceiving and demonstrating capabilities to exploit these systems through rapid-prototyping projects.</li> <li>2) Influencing the design and operation of new space systems for warfighters by advocating tactical applications and missions for them (in the form of analyses and integration of space systems into roadmaps and architectures for Air Force weapons and Command, Control, Communications, Computers, Intelligence [ C4I] systems).</li> <li>3) Supporting education and training of operational forces in emerging space/space-related technologies and concepts, as well as education of national providers about operational user requirements and environments, through participation in combat and contingency operations, exercises, and project demonstrations.</li> </ol> <p>AF TENCAP efforts described in the individual years FY 2002, FY 2003 and FY2004 are categorized in generalized groups containing the start, continuation and completion of one-to-two-year projects which are then transitioned to the user. This process is reflected in the Schedule Profile.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$8,755 Exploit existing space systems for tactical applications through one-two year rapid-prototyping projects (addresses critical short-term warfighter needs and provides tactical applications to supply otherwise unavailable capabilities); identify, advocate, and influence the design and operation of future space systems for tactical applications and missions; support education and training of operational forces by conducting specialized training that enhances education of warfighters about the capabilities and tactical utility of national systems</p> <p>(U) \$1,860 GPS Jammer detection and location system (GPS-JLOC)</p> <p>(U) \$563 Continued transition of AF TENCAP concept demonstrations to operational units/acquisition agency</p>											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		February 2003
PE NUMBER AND TITLE <b>0207247F Air Force TENCAP</b>		PROJECT <b>0001</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$678 Provided program support and other government support</p> <p>(U) \$11,856 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$8,895 Exploit existing space systems for tactical applications through one-two year rapid-prototyping projects (addresses critical short-term warfighter needs and provides tactical applications to supply otherwise unavailable capabilities); identify, advocate, and influence the design and operation of future space systems for tactical applications and missions; support education and training of operational forces by conducting specialized training that enhances education of warfighters about the capabilities and tactical utility of national systems</p> <p>(U) \$2,763 GPS Jammer detection and location system (GPS-JLOC)</p> <p>(U) \$1,658 Begin adverse weather imaging system (FOGLITE)</p> <p>(U) \$1,200 Continue transition of AF TENCAP concept demonstrations to operational units/acquisition agency</p> <p>(U) \$550 Provided program support and other government support</p> <p>(U) \$15,066 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$8,875 Exploit existing space systems for tactical applications through one-two year rapid-prototyping projects (addresses critical short-term warfighter needs and provides tactical applications to supply otherwise unavailable capabilities); identify, advocate, and influence the design and operation of future space systems for tactical applications and missions; support education and training of operational forces by conducting specialized training that enhances education of warfighters about the capabilities and tactical utility of national systems</p> <p>(U) \$1,220 Continue transition of AF TENCAP concept demonstrations to operational units/acquisition agency</p> <p>(U) \$384 Provide program support and other government support</p> <p>(U) \$10,479 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Activity 7, Operational Systems Development, due to its efforts supporting fielded units.</p>		
Project 0001	Page 2 of 6 Pages	Exhibit R-2 (PE 0207247F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE				
							February 2003				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0207247F Air Force TENCAP</b>			<b>0001</b>				
<b>(U) C. Program Change Summary (\$ in Thousands)</b>											
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>		<u>Total Cost</u>			
(U)	Previous President's Budget			12,689	10,496	10,672		TBD			
(U)	Appropriated Value			12,811	15,296						
(U)	Adjustments to Appropriated Value										
	a. Congressional/General Reductions			-122	-162						
	b. Small Business Innovative Research			-775							
	c. Omnibus or Other Above Threshold Reprogram				-68						
	d. Below Threshold Reprogram										
	e. Rescissions			-58							
(U)	Adjustments to Budget Years Since FY 2003 PBR					-193					
(U)	Current Budget Submit/FY 2004 PBR			11,856	15,066	10,479		TBD			
(U)	<u>Significant Program Changes:</u>										
	Significant Program Changes (funding, schedule, and/or technical parameter): None										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Other APPN	196	184	194	197	200	204	207	211	Continuing	TBD
	Other Procurement, Air										
	Force funding in 'Intelligence										
	Communications										
	Equipment,' WSC 832070										
<b>(U) E. Acquisition Strategy</b>											
	Cost plus award fee contracts with indefinite delivery and quantity contract vehicles available to AF TENCAP. Theater MAJCOM mission area plan (MAP) deficiencies provide the requirements for AF TENCAP development projects. Each project must correct a MAP deficiency or deficiencies and be approved by the Space Warfare Center (SWC) Strategic Planning Process. In addition, theater MAJCOMs must be willing to assume future acquisition and logistics responsibilities, budgeting for projects in their Program Objective Memorandum submissions.										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207247F Air Force TENCAP					PROJECT 0001			
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) FY 2002 Projects Evaluated and Approved	*												
(U) FY 2002 Projects Authorized to Proceed		*											
(U) FY 2003 Projects Identified		*											
(U) Contractor Proposals for FY 2003 Projects				*									
(U) FY 2003 Projects Evaluated and Approved				*									
(U) FY 2003 Projects Authorized to Proceed					*								
(U) FY 2004 Projects Identified						X							
(U) Contractor Proposals for FY 2004								X					
(U) FY 2004 Projects Evaluated and Approved								X					
(U) FY 2004 Projects Authorized to Proceed									X				
(U) FY 2005 Projects Identified										X			
(U) Contractor Proposals for FY 2005												X	
(U) FY 2005 Projects Evaluated and Approved												X	
* = Completed Event													
X = Planned Event													
Narrative: N/A													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
<b>07 - Operational System Development</b>				<b>0207247F Air Force TENCAP</b>			<b>0001</b>				
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Exploiting existing space systems; influencing future systems; supporting education and training					8,755		8,895		8,875	
(U)	GPS JLOC					1,860		2,763			
(U)	FOGLITE							1,658			
(U)	Transitioning concept demonstrations to operational units/acquisition agency					563		1,200		1,220	
(U)	Program support					678		550		384	
(U)	Total					11,856		15,066		10,479	
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Product Development Organizations</u>											
Lockheed Martin	C/CPAF	Sept 95	42,494	42,494	42,494	0	0	0	0	42,494	
EADDS II Contract*	C/CPAF	Aug 00	Continuing	Continuing	6,557	3,522	2,038	2,100	Continuing	TBD	
APTI	**	**	4,213	4,213	4,213	0	0	0	1,951	6,164	
General Atomics	***	***			1,395		1,658	1,000	Continuing	TBD	
NAVSYS	FFP	Aug 02			0	1,860	2,763			4,623	
Multiple	Various	Multiple	Continuing	Continuing	28,295	4,614	7,157	6,096	Continuing	TBD	
* Science Applications International Corporation (SAIC), Computer Science Corporation (CSC), and SPARTA (a group of small businesses) are the prime contractors for the Engineering Analysis Design & Development II contract that now serves as the primary AF TENCAP contract vehicle.											
**FY00 funds were obligated on a classified Navy TENCAP contract. FY01 funds placed on GSA contract.											
***Funds obligated on a classified Big Safari contract.											
<u>Support and Management Organizations</u>											
Program Oversight	Various	Multiple	Continuing	Continuing	3,648	1,860	1,450	1,283	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
Not Applicable											



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207247F Air Force TENCAP			PROJECT 0001		
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				82,954	9,996	13,616	9,196	TBD	TBD
Subtotal Support and Management				3,648	1,860	1,450	1,283	TBD	TBD
Subtotal Test and Evaluation									
Total Project				86,602	11,856	15,066	10,479	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>February 2003</b>														
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207253F Compass Call</b>					PROJECT <b>4804</b>														
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost												
4804	Compass Call	3,647	9,239	3,790	0	4,858	4,993	0	0	0	TBD												
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0												
<p>In FY02, COMPASS CALL received \$12.0M as part of the Defense Emergency Relief Fund (DERF). Funding was used to begin integration of Project Suter capability to link information operations and intelligence, surveillance and reconnaissance platforms in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.</p> <p>(U) <b><u>A. Mission Description</u></b>            COMPASS CALL is the USAF's airborne wide area coverage offensive counter information system. It denies, disrupts, degrades and deceives adversary voice and data communications, disrupting their ability to effectively command and control forces in the field. Although COMPASS CALL has been a fielded, operational capability since 1983, it continues to evolve and adapt to counter the constantly changing adversary tactical communications. Most recently, this is reflected in a shift from traditional military communication systems to an increasing reliance on commercial/civil capabilities.</p> <p>The development to be accomplished by these funds center around the direct incorporation of capabilities provided by System Development and Demonstration (SDD) and other related programs/activities into the operational system to include Block 20, Block 30, Block 35 and related integration, testing, training, simulation and deploying systems. The evolution of the adversary threat requires developmental investments in a wide range of activities and ancillary subsystems. These activities include significant effort in the development and operational fielding of the Tactical Radio Acquisition and Countermeasures Subsystem (TRACS) which represents the next evolutionary capability increase in receiver/countermeasure effectivity for COMPASS CALL. Activities are also required in the related areas of human-machine interfaces, software, testing and integration, signals analysis, systems engineering integration, countermeasure development for the evolving threat, mission planning, Concept of Operations (CONOPS) development and program planning for the production of subsystems and capabilities. RDT&amp;E articles for FY00-04 include TRACS engineering and manufacturing development units necessary for this system to evolve to counter emerging threats as well as other subsystems to counter the evolving threats.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">(U)</td> <td style="width: 15%;">\$0</td> <td>Accomplishments/Planned Program</td> </tr> <tr> <td>(U)</td> <td>\$2,825</td> <td>Develops and integrates classified capabilities using new technologies against emerging/evolving C3I threats</td> </tr> <tr> <td>(U)</td> <td>\$822</td> <td>System Engineering, Integration, Ground and Flight Test</td> </tr> <tr> <td>(U)</td> <td>\$3,647</td> <td>Total</td> </tr> </table>												(U)	\$0	Accomplishments/Planned Program	(U)	\$2,825	Develops and integrates classified capabilities using new technologies against emerging/evolving C3I threats	(U)	\$822	System Engineering, Integration, Ground and Flight Test	(U)	\$3,647	Total
(U)	\$0	Accomplishments/Planned Program																					
(U)	\$2,825	Develops and integrates classified capabilities using new technologies against emerging/evolving C3I threats																					
(U)	\$822	System Engineering, Integration, Ground and Flight Test																					
(U)	\$3,647	Total																					
Project 4804		Page 1 of 4 Pages					Exhibit R-2 (PE 0207253F)																

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																																																							
BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207253F Compass Call</b>	PROJECT <b>4804</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$7,839 Develops and integrates classified capabilities using new technologies against emerging/evolving C3I threats</p> <p>(U) \$1,400 System Engineering and Integration, Ground and Flight Test</p> <p>(U) \$9,239 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$3,790 Systems Engineering, development, integration, and test of classified capabilities (to include subsystems added by Congress) such as TRACS, Analysis, and Special Purpose Emitter Array (SPEAR))</p> <p>(U) \$3,790 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is categorized as Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.</p> <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 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>FY 2004</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">3,868</td> <td style="text-align: center;">3,877</td> <td style="text-align: center;">3,859</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">3,908</td> <td style="text-align: center;">9,377</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;">-40</td> <td style="text-align: center;">-100</td> <td></td> <td></td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-107</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;">-96</td> <td style="text-align: center;">-38</td> <td></td> <td></td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-18</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: center;">-69</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">3,647</td> <td style="text-align: center;">9,239</td> <td style="text-align: center;">3,790</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	3,868	3,877	3,859	TBD	(U) Appropriated Value	3,908	9,377			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-40	-100			b. Small Business Innovative Research	-107				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-96	-38			e. Rescissions	-18				(U) Adjustments to Budget Years Since FY 2003 PBR			-69		(U) Current Budget Submit/FY 2004 PBR	3,647	9,239	3,790	TBD
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>																																																					
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Project 4804	Page 2 of 4 Pages	Exhibit R-2 (PE 0207253F)																																																							

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207253F Compass Call</b>	<b>PROJECT</b> <b>4804</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) PE 0207253F, Aircraft Modification (3010)	42,552	17,864	16,525	8,239	8,400	6,446	8,945	9,115		TBD
(U) PE 0207253F, Aircraft Initial Spares (3010)	12,346	13,295	10,519	12,253	13,993	14,259	14,901	15,184		TBD
(U) PE 0207253F, Other Charges (3010)	50,687	34,735	31,355	16,782	8,551	8,713	9,106	9,279		TBD
(U) PE 0207253F, Support Equipment, (3010)	264	262	254							TBD

**(U) E. Acquisition Strategy**

Managed by BIG SAFARI program office. Program employs multiple contracting strategies.

**(U) F. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TRACS-C Flight Test									X	X		
(U) TRACS Spiral Upgrade						X						
(U) TRACS F-Ground Test												X

\* Denotes completed event  
X Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207253F Compass Call			PROJECT 4804		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Hardware/Software Development					3,508		9,239		3,790
(U)	System Integration					139				
(U)	Total					3,647		9,239		3,790
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
BAE Systems, Nashua NH	TBD	FY03	TBD	TBD	11,892	3,508	9,239	3,790	Continuing	TBD
<u>Support and Management Organizations</u>										
None										
<u>Test and Evaluation Organizations</u>										
EPG	MIPR/PO	FY03	TBD	TBD		139	0			139
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					11,892	3,508	9,239	3,790	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation						139	0			139
Total Project					11,892	3,647	9,239	3,790	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>					PROJECT <b>1012</b>	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
1012 Aircraft Engine Component Improvement Program	163,498	182,755	180,112	168,771	190,886	170,231	172,681	174,993	Continuing	TBD	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0	
<p>(U) <b><u>A. Mission Description</u></b>          The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines throughout their service life. The program's highest priority is to maintain flight safety. Engine CIP corrects service revealed deficiencies and reduces total ownership costs (RTOC). Additional goals include improved system Operational Readiness (OR) and Reliability and Maintainability (R&amp;M). Historically, aircraft systems change missions, tactics, and environments to meet changing threats throughout their lives. Numerous new problems can develop in the engines through actual use and Engine CIP provides the only funds to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. Engine CIP starts with delivery of the first production engine purchased with procurement funds, and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP addresses out-of-warranty usage and life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Since operational and safety problems arise throughout a system's service life, Engine CIP must be maintained at a level to provide the engineering support to make the changes essential for continued satisfactory system performance at affordable costs. Engine CIP ensures continued improvements in engine R&amp;M factors, which reduce outyear support costs. Historically, R&amp;M related Engine CIP efforts reduce outyear Operations and Maintenance (O&amp;M) and spares costs by a ratio greater than 21 to 1. MAJCOMs assume a viable Engine CIP effort is in place when submitting their budget requests for O&amp;M and engine spares. Without the outyear cost avoidance provided by Engine CIP, outyear support funding would have to be significantly increased.</p>											
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments / Planned Program</p> <p>(U) \$136,977 Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)</p> <p>(U) \$22,321 Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)</p> <p>(U) \$4,200 Continuing mission support</p> <p>(U) \$163,498 Total</p>											
Project 1012			Page 1 of 5 Pages				Exhibit R-2 (PE 0207268F)				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>				DATE <b>February 2003</b>	
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>		<b>PE NUMBER AND TITLE</b> <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>		<b>PROJECT</b> <b>1012</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	Accomplishments / Planned Program			
<b>(U)</b>	\$156,386	Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)			
<b>(U)</b>	\$20,769	Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)			
<b>(U)</b>	\$5,600	Continuing mission support			
<b>(U)</b>	\$182,755	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
<b>(U)</b>	\$0	Accomplishments / Planned Program			
<b>(U)</b>	\$142,278	Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)			
<b>(U)</b>	\$33,000	Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests-including F/A-22 engine maturation testing)			
<b>(U)</b>	\$4,834	Continuing mission support			
<b>(U)</b>	\$180,112	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
This program is in budget activity 7 - Operational System Development, because all efforts support fielded systems.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
<b>(U)</b>	Previous President's Budget	173,351	186,690	211,027	TBD
<b>(U)</b>	Appropriated Value	175,101	186,690		
<b>(U)</b>	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,750	-1,974		
	b. Small Business Innovative Research	-5,646			
	c. Omnibus or Other Above Threshold Reprogram		-1,961		
	d. Below Threshold Reprogram	-3,406			
	e. Rescissions	-801			
<b>(U)</b>	Adjustments to Budget Years Since FY 2003 PBR			-30,915	
<b>(U)</b>	Current Budget Submit/FY 2004 PBR	163,498	182,755	180,112	TBD
<b>Project 1012</b>		Page 2 of 5 Pages		Exhibit R-2 (PE 0207268F)	

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2003</b>																																																																																																																															
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<p>(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b></p> <p>(U) <b><u>Significant Program Changes:</u></b> FY 2004 decreased with paybacks in FY2005/6 to support other Air Force/DoD requirements.</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:10%;"></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>FY 2008</u></th> <th style="width:10%;"><u>FY 2009</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align:center;"><u>Actual</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Estimate</u></td> <td style="text-align:center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="11">RELATED ACTIVITIES:</td> </tr> <tr> <td colspan="11">(U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior years</td> </tr> <tr> <td colspan="11">(U) - PEs # 0203752A and #0205633N, Army/Navy Aircraft Engine CIPs for FY 1996 and following years</td> </tr> <tr> <td colspan="11"> <p>(U) <b><u>E. 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**RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)**

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>	<b>PROJECT</b> <b>1012</b>
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Contracted Tasks	136,977	156,386	142,278
(U) AFFTC Flight Tests	441	1,900	3,000
(U) AEDC Altitude Tests	21,880	18,869	30,000
(U) Mission Support	4,200	5,600	4,834
(U) Total	163,498	182,755	180,112

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

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
GE-Evandale, OH	CPAF	Dec 99	N/A	N/A		62,304	58,308	55,076	Continuing	TBD
Pratt & Whitney	CPAF	Dec 99	N/A	N/A		65,143	82,778	72,152	Continuing	TBD
GE-Lynn, MA	CPFF	Dec 99	N/A	N/A		3,798	5,961	5,563	Continuing	TBD
Rolls Royce/Allison	CPFF	Jan 98	N/A	N/A		1,339	1,955	1,725	Continuing	TBD
Teledyne	CPFF	Dec 99	N/A	N/A		3,028	3,425	3,126	Continuing	TBD
Honeywell	CPFF	Jan 98	N/A	N/A		314	1,193	1,739	Continuing	TBD
Williams International	CPFF	Jan 98	N/A	N/A		875	2,628	2,695	Continuing	TBD
Hamilton/Sundstrand	CPFF	Jan 98	N/A	N/A		176	138	202	Continuing	TBD
<u>Support and Management Organizations</u>										
In House Support/ Misc						4,200	5,600	4,834	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFFTC-Edwards AFB, CA						441	1,900	3,000	Continuing	TBD
AEDC-Arnold AFB, TN						21,880	18,869	30,000	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0207268F Aircraft Engine Component Improvement Program (CIP)			1012	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development		136,977	156,386	142,278	TBD
	Subtotal Support and Management		4,200	5,600	4,834	TBD
	Subtotal Test and Evaluation		22,321	20,769	33,000	TBD
	Total Project		163,498	182,755	180,112	TBD
<p>Footnote: Total prior to FY 2002 is not reflected above because the program was funded in procurement through FY 1979 and RDT&amp;E funding began in FY 1980.</p>						

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207277F Chief's Innovation Program</b>					PROJECT <b>4931</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4931	Eagle Vision	1,871	1,879	1,880	1,884	1,865	1,859	1,881	1,907	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
Eagle Vision transferred from PE 35208F in FY02.											
<b>(U) <u>A. Mission Description</u></b>											
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 Eagle Vision being procured for South Carolina ANG. Eagle Vision transferred from PE 35208F in FY02.											
<b>(U) <u>FY 2002 (\$ in Thousands)</u></b>											
(U) \$0		Accomplishments/Planned Program									
(U) \$1,180		Continue to update baselines and reduce footprints on Eagle Vision units									
(U) \$691		Continue to provide sustaining system engineering and technical support									
(U) \$1,871		Total									
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>											
(U) \$0		Accomplishments/Planned Program									
(U) \$1,210		Continue to update baselines and reduce footprints on Eagle Vision units									
(U) \$669		Continue to provide sustaining system engineering and technical support									
(U) \$1,879		Total									
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>											
(U) \$0		Accomplishments/Planned Program									
(U) \$1,170		Continue to update baselines and reduce footprints on Eagle Vision units									
(U) \$710		Continue to provide sustaining system engineering and technical support									
(U) \$1,880		Total									
Project 4931				Page 1 of 3 Pages				Exhibit R-2 (PE 0207277F)			

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>							DATE <b>February 2003</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207277F Chief's Innovation Program</b>				PROJECT <b>4931</b>		
<b>(U) B. Budget Activity Justification</b>										
Program is in Budget Activity 7 because it provides for the development of technologies and capabilities in support of operational system development.										
<b>(U) C. Program Change Summary (\$ in Thousands)</b>										
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			<u>Total Cost</u>	
(U)	Previous President's Budget			1,950	1,925	1,915				
(U)	Appropriated Value			1,961	1,925					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions			-90	-22					
	b. Small Business Innovative Research									
	c. Omnibus or Other Above Threshold Reprogram				-19					
	d. Below Threshold Reprogram									
	e. Rescissions									
(U)	Adjustments to Budget Years Since FY 2003 PBR				-5	-35				
(U)	Current Budget Submit/FY 2004 PBR			1,871	1,879	1,880			TBD	
<b>(U) Significant Program Changes:</b>										
This effort, previously part of Distributed Common Ground System PE 0305208F, was transferred in FY02 to this PE.										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	AF RDT&E									
(U)	Other APPN	3,689	3,748	3,476	4,595	4,742	4,791	5,213	5,312	Continuing
										TBD
<b>(U) E. Acquisition Strategy</b>										
Eagle Vision was approved to use Sole Source procurement via an International Agreement Competitive Restrictions (IACR) for Acquisition and Sustainment. Future systems and technology will be contracted for under a competitive Request for Proposal ( RFP) process where possible.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
				1	2	3	4	1	2	3
				1	2	3	4	1	2	3
(U)	Continue baseline upgrades and footprint reduction			*			X		X	

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>							DATE <b>February 2003</b>			
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>					<b>PE NUMBER AND TITLE</b> <b>0207277F Chief's Innovation Program</b>			<b>PROJECT</b> <b>4931</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			
(U) Hardware/Software Development					1,180	1,210	1,170	1,170		
(U) Program Management					691	669	710	710		
(U) Total					1,871	1,879	1,880	1,880		
<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>Performing</u>	<u>Project</u>					
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Activity</u>	<u>Office</u>	<u>to FY 2002</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>								
<u>Product Development Organizations</u>										
TBD					1,180	1,210	1,170	Continuing	TBD	
<u>Support and Management Organizations</u>										
MITRE					391	369	385	Continuing	TBD	
ITSP					300	300	325	Continuing	TBD	
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development						1,180	1,210	1,170	TBD	TBD
Subtotal Support and Management						691	669	710	TBD	TBD
Subtotal Test and Evaluation										
Total Project						1,871	1,879	1,880	TBD	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>	<b>PROJECT</b> <b>4515</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4515 Joint Air-to-Surface Standoff Missile (JASSM)	82,793	51,047	31,216	45,897	61,640	13,637	0	0	0	1,032,956
Quantity of RDT&E Articles	0	0	6	0	0	0	0	0	0	88

**(U) A. Mission Description**

JASSM is a joint Air Force/Navy program with the Air Force as the lead Service. Designated ACAT 1C by the Defense Acquisition Board (DAB) during the Low Rate Initial Production (LRIP) decision, this program provides an affordable long range, conventional air-to-surface, autonomous, precision guided, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. Initial integration efforts are for the B-52H and F-16 (Block 50). Objective aircraft include the B-1, B-2, F-15E, F-16 (Block 40), F-117, and F/A-18E/F. The JASSM-ER increased standoff range will allow us to attack high value targets with precision, deeper into enemy territory while minimizing the threat to the launch aircraft.

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

- (U) \$0 Accomplishments/Planned program
- (U) \$64,796 Continue JASSM EMD.
- (U) \$8,377 Continue flight test support, live fire test support, target construction/rehab.
- (U) \$5,826 Continue aircraft integration.
- (U) \$584 Continue mission planning and intelligence systems integration.
- (U) \$2,771 Continue program office support .
- (U) \$439 Continue mission support.
- (U) \$82,793 Total

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

- (U) \$0 Accomplishments/Planned program
- (U) \$30,336 Continue JASSM EMD
- (U) \$10,000 Begin JASSM-ER risk reduction activities and development.
- (U) \$7,981 Continue flight test support, live fire test support, target construction/rehab.
- (U) \$1,135 Continue aircraft integration.
- (U) \$1,007 Continue mission planning and intelligence systems integration.



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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207325F Joint Air-to-Surface Standoff Missile</b> <b>(JASSM)</b>	<b>PROJECT</b> <b>4515</b>
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(U) **A. Mission Description Continued**

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

(U) \$588 Continue program office support.  
(U) \$51,047 Total

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

(U) \$0 Accomplishments/Planned program  
(U) \$3,683 Continue JASSM EMD.  
(U) \$19,421 Continue JASSM-ER development  
(U) \$3,188 Continue range test support.  
(U) \$2,478 Begin JASSM-ER integration on B-1.  
(U) \$789 Continue mission planning and intelligence systems integration.  
(U) \$1,657 Continue program office support.  
(U) \$31,216 Total

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

This program is reflected in Budget Activity 7, Operational System Development, because production (Low Rate Initial Production) began in FY02.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	79,197	42,097	8,822	874,702
(U) Appropriated Value	79,197	52,097		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-550		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-500		
d. Below Threshold Reprogram	4,000			
e. Rescissions	-404			
(U) Adjustments to Budget Years Since FY 2003 PBR			22,394	158,254
(U) Current Budget Submit/FY 2004 PBR	82,793	51,047	31,216	1,032,956

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>	PROJECT <b>4515</b>
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(U) **C. Program Change Summary (\$ in Thousands) Continued**

(U) **Significant Program Changes:**

Funding: FY03: Congress appropriated additional \$10,000 for JASSM-ER acceleration. FY04: Increased funding to continue JASSM-ER development.  
Schedule: None.  
Technical: None.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement (AF) JASSM	41,988	50,095	101,101	145,401	148,578	197,633	303,200	309,200	1,210,395	2,507,591
(U) SEEK EAGLE	742	3,735	1,433	2,849	0	2,845			0	11,604

(U) **E. Acquisition Strategy**

All major contracts within this Program Element were awarded through full and open competition. The EMD phase option for JASSM is Cost Plus Award Fee (CPAF). This contract type provides the government the flexibility to periodically evaluate contractor performance while motivating the contractor to execute a successful program with emphasis on EMD schedule, system performance, and management effectiveness.

JASSM is an OSD flagship program under Cost as An Independent Variable (CAIV). This allows the contractor to have maximum trade space to develop an affordable missile that meets the four key performance parameters. Under CAIV, the program maintains a threshold AUPP of \$700,000 (BY95\$) and an objective AUPP of \$400,000 (BY95\$) for 2,400 units baseline JASSM.

The government is buying the JASSM system based on a contractor-developed, government-approved System Performance Specification (SPS) which became contractually binding at downselect. The contractor assumes Total System Performance Responsibility (TSPR) as defined in the SPS and warrants system performance for 15 years. Accordingly, the contractor is responsible not only for the design of the missile system, but also for planning and executing the Development Test and Evaluation (DT&E) program to verify the missile system performance. In its role as facilitator and advisor to the contractor, the government formally arranges and funds the use of government flight test support for DT&E. Although funded by the government, flight test support funds are part of the negotiated commitment between the contractor and the government ensuring the contractor is able to execute the DT&E program according to the scope of the EMD contract.

The JASSM-ER program begins EMD in FY04. A Congressional add of \$10M in FY03 to accelerate the program will be used for JASSM-ER risk reduction activities.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0207325F Joint Air-to-Surface Standoff Missile (JASSM)</b>					<b>4515</b>		
<b>(U) <u>F. Schedule Profile</u></b>												
		<u>FY 2002</u>					<u>FY 2003</u>				<u>FY 2004</u>	
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	First DT/OT Flight - 2nd Qtr FY 2001											
(U)	*											
(U)	LRIP Decision - 1st Qtr FY 2002											
(U)		*										
(U)	Begin IOT&E Flight Testing (AFOTEC)											
	- 3rd Qtr FY 2002											
(U)					*							
(U)	LRIP II Contract Award - 1st Qtr FY 2003											
(U)	Last DT/OT Flight Testing - 2nd Qtr FY 2003											
						X						
(U)	Complete IOT&E Flight Testing (AFOTEC)											
	- 4th Qtr FY 2003											
								X				
(U)	RAA B-52 - 4th Qtr FY 2003											
(U)	Milestone III - 1st Qtr FY 2004											
									X			
(U)	Start JASSM-ER Development											
	- 1 st Qtr FY 2004											
	* = Completed Event											
	X = Planned Event											

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207325F Joint Air-to-Surface Standoff Missile</b> <b>(JASSM)</b>	<b>PROJECT</b> <b>4515</b>
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Major Contracts	64,475	40,321	23,104
(U) Associated Contracts	5,826	1,135	2,478
(U) Support Contracts	3,676	1,610	2,446
(U) In-House	439	0	0
(U) Test Support	8,377	7,981	3,188
(U) Total	82,793	51,047	31,216

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

(U) **Performing Organizations:**

<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<b><u>Product Development Organizations</u></b>										
MDA - PDRR I	C/CPFF	Jun 96	120,571	120,571	120,571	0	0		0	120,571
LM - PDRR I& II	C/CPFF	Jun 96	151,109	151,109	151,109	0	0		0	151,109
LM - EMD	C/CPAF	Nov 98	529,417	529,417	310,314	64,475	40,321	23,104	91,203	529,417
NOTE: Contractors are MDA - McDonnell Douglas Aircraft; LM - Lockheed Martin										
<b><u>Support and Management Organizations</u></b>										
F-16 SPO	PO	Apr 96	N/A	N/A	20,943	4,603	1,135	0	0	26,681
B-52 SPO	PO	Sep 96	N/A	N/A	30,029	1,223	0	2,478	9,913	43,643
Other Acft Integ	PO	Various	N/A	N/A	3,463	0	0	0	0	3,463
Sverdrup Inc.	C/CPAF	Jan 96	N/A	N/A	14,257	1,698	0	845	3,802	20,602
Navy	MIPR	Jan 96	N/A	N/A	2,248	0	0	0	0	2,248

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0207325F Joint Air-to-Surface Standoff Missile					4515
					(JASSM)					
<b>(U) Performing Organizations Continued:</b>										
<u>Support and Management Organizations</u>										
JASSM SPO/Other	Misc	Various	N/A	N/A	28,113	2,417	1,610	1,601	1,612	35,353
<u>Test and Evaluation Organizations</u>										
46TW	PO	Jan 96	N/A	N/A	65,679	8,377	7,981	3,188	14,644	99,869
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
Not Applicable										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					581,994	64,475	40,321	23,104	91,203	801,097
Subtotal Support and Management					99,053	9,941	2,745	4,924	15,327	131,990
Subtotal Test and Evaluation					65,679	8,377	7,981	3,188	14,644	99,869
Total Project					746,726	82,793	51,047	31,216	121,174	1,032,956

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

DATE

**February 2003**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207410F AEROSPACE OPERATION CENTER (AOC)**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	19,489	71,459	27,887	36,217	52,152	50,220	75,288	48,839	Continuing	TBD
4372 Time Critical Targeting	19,489	24,496	2,390	2,390	2,390	1,290	1,290	1,290	Continuing	TBD
5117 Integration Development	0	46,963	25,497	33,827	49,762	48,930	73,998	47,549	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

The AOC provides the necessary air operations Command and Control (C2) and force execution tools for Air Force, joint, and coalition leaders to successfully prosecute air campaigns through rapid and effective C2 decisions. The AOC program also provides a necessary structure to transition and act as the focal point for a singular technical 'center of mass' for systems integration, technical transition, and process refinement for rapidly evolving C2 programs, processes and concepts. Numerous independent systems inherent in the entire spectrum of command, control, and communications and Intelligence, Surveillance and Reconnaissance (ISR) battle management encompass a robust fully functioning AOC. The AOC program utilizes the spiral development acquisition process supported by the Air Force Transformation Center (AFTC), formerly known as Combined Air Operations Center-eXperimental (CAOC-X), located at Langley AFB, Virginia. AFTC serves as the place and process to bring together the user, developer and tester to improve the ability of C2 systems to support the USAF's Air Expeditionary Forces. In addition, AFTC serves as the engineering test bed, mirroring the operational baselines to the greatest possible extent.

As a subset of AOC functionality, Time Critical Targeting Functionality (TCTF) provides a capability for the Joint Forces Commander (JFC) / Joint Forces Air Component Commander (JFACC) to prosecute theater time sensitive targets across the spectrum of conflict. The TCTF will utilize a mix of land, air, space and sea-based assets to find, fix, track, target, engage and assess time sensitive targets. Follow-on AOC initiatives will include spiral-developed enhancements/integration of other relevant C2ISR systems supporting the AF's present and future global command and control systems.

The primary program objectives of the AOC program are to provide capabilities to collect, share and aggregate decision quality data between C2 nodes, ISR assets and attack aircraft; correlate/fuse information; reduce AOC forward footprint; improve deployability; and make improvements in information sharing among coalition partners.

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

This program is a budget activity 7 - Operation System Development because it provides funding for the modernization of a currently existing and operating system.

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

DATE  
**February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0207410F AEROSPACE OPERATION CENTER (AOC)**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	19,125	35,875	2,392	TBD
(U) Appropriated Value	19,125	73,075		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-389			
b. Small Business Innovative Research	-533			
c. Omnibus or Other Above Threshold Reprogram		-354		
d. Below Threshold Reprogram	992			
e. Rescissions	-95			
(U) Adjustments to Budget Years Since FY 2003 PBR	389	-1,262	25,495	
(U) Current Budget Submit/FY 2004 PBR	19,489	71,459	27,887	TBD

(U) **Significant Program Changes:**

Funding provided to support AOC weapons system FY04 - FY09. AOC program received an FY03 Congressional Plus-Up of \$37.2M for the purposes of integration development (BPAC 675117 Integration Development). In addition, \$9.53M was transferred from BPAC 674372-Time Critical Targeting to fund BPAC 675117.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>					PROJECT <b>4372</b>
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4372    Time Critical Targeting	19,489	24,496	2,390	2,390	2,390	1,290	1,290	1,290	Continuing	TBD
<p>Note 1. Time Critical Targeting Concept Exploration/Concept Definition efforts were funded in FY00 and FY01 in PE 0208060F and transferred to PE 0207027F in FY02. Time Critical Targeting functionality funding has been transferred to PE 0207027F and PE 0207410F.</p> <p>Note 2. Funding provided to support TCTF weapons system FY04-FY09. Transferred \$9.53M to BPAC 675117 ( Integration Development).</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Time Critical Targeting Functionality (TCTF) program enables the successful prosecution of the air campaign by Air Force, joint, and coalition leaders allowing them to make rapid and effective Command and Control (C2) decisions by providing the necessary air operations C2 and force execution tools.                      To support AOC Combat OPS, TCTF provides a capability for the Joint Forces Commander (JFC) / Joint Forces Air Component Commander (JFACC) to prosecute theater time sensitive targets across the spectrum of conflict. The TCTF will utilize a mix of land, air, space and sea-based assets to find, fix, track, target, assess and engage time sensitive targets. Follow-on AOC initiatives will include spiral-developed enhancements/integration of other relevant C2ISR systems supporting the AF's present and future global command and control systems.                      The primary program objective of the TCTF program is to provide capabilities to collect, share and aggregate decision quality data between C2 nodes, ISR assets and attack aircraft; correlate/fuse information; reduce AOC forward footprint; improve deployability; and make improvements in information sharing among coalition partners.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0                                    Accomplishments/Planned Program</p> <p>(U) \$3,661                                Surveyed applicable commercial and government applications and technologies to evaluate capabilities to enhance AOC functionality.</p> <p>(U) \$15,828                              Developed and integrated software capability meeting threshold requirements of the Operational Requirements Document, TCT Functionality, ACAT III, Air Force C2ISR Center (AFC2ISRC). Core Increment functionality included target development, sensor integration, threat launch and impact prediction, weapon-to-target pairing, intelligence preparation of the battlespace, and terrain and mobility analyses. Supported evolving air operations C2 concepts, exercises and user evaluations (e.g. AFTC &amp; JEFX)</p> <p>(U) \$19,489                              Total</p>										
Project 4372			Page 3 of 12 Pages				Exhibit R-2A (PE 0207410F)			



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

DATE **February 2003**

BUDGET ACTIVITY **07 - Operational System Development** PE NUMBER AND TITLE **0207410F AEROSPACE OPERATION CENTER (AOC)** PROJECT **4372**

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

(U) FY 2003 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$21,696 Continue software development and integration of TCT Functionality. Integrate field, train and support core increment at operational locations (hardware and software). Post Core Increment functionality will include additional decision aids, situation awareness, and analytical software applications to locate, identify, track, nominate and recommend ISR/strike assignments against TCTs as defined in TCT Functionality ORD. Develop an interface to the ISR Battle Manager to enable dynamic re-tasking of ISR assets to support prosecution of TCTs. Continue migration to Web-Enabled capabilities.
- (U) \$2,800 Conduct developmental and operational test and evaluation activities.
- (U) \$24,496 Total

(U) FY 2004 (\$ in Thousands)

- (U) \$0 Accomplishments/Planned Program
- (U) \$1,590 Complete development of 1st Post Core Increment
- (U) \$800 Conduct test and evaluation activities for Post Core development
- (U) \$2,390 Total

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

N/A

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	0	0	0	0	0	0	0	0	Continuing	TBD
(U) Other APPN										TBD
(U) Other Procurement, AF (3080)	0	0	1,900	1,900	4,200	0	0	0	Continuing	

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>	PROJECT <b>4372</b>
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**(U) D. Acquisition Strategy**

Electronic Systems Center (ESC) provides program management for the AOC Weapon System. The acquisition approach provides for the horizontal integration of legacy C2ISR, the integration of emerging technologies, or the introduction of a revolutionary C2ISR warfighting capability. The TCT Functionality is an outgrowth of the Air Force's limited ability to respond to Time Sensitive Targets (TSTs) in the desert and the Balkans. The following documents provide the requirements and guidance: Combat Air Force (CAF) Concept of Operations for Command and Control Against Time Critical Targets, July 1997; AF Mission Need Statement (MNS) for Theater Missile Defense, October 1991; JROCM 065-99 , MNS for Theater Air and Missile Defense (TAMD), July 1999; Mission Need Statement (MNS) for Joint TAMD, May 1999; Program Management Directive (PMD) 2440/Program Element (PE) # 27410 for AOC; Operational Requirements Document (ORD) AFC2ISRC Time Critical Targeting Functionality, ACAT III, approved by AFROC, Oct, 2001; AOC CONOPS, Mar 01; ORD for AOC Modernization Program, ACATIII, approved by JROC Sept 02. In support of the timely prosecution of TSTs, the AFC2ISRC, ESC, Air Force Research Lab (AFRL), and others have been involved in the development of several TCT decision support tools. As a means to evaluate and integrate the above applications, AFC2ISRC and ESC established a Software Interoperability Facility for TCT (SWIFT). This effort will serve as the initial baseline for the development of a TCT capability that will be fielded at designated AOC locations. An 8(a) set aside contract was awarded to design, develop, test, integrate, install, train and support TCT Functionality software. Separate contractors will be used to procure communication and computer hardware. The TCT Functionality will be updated using evolutionary acquisition guidelines. The plan is to field a rapidly deployable, small footprint construct to match Air Force AEF concept. The basic TCT Functionality configuration utilizes and improves basic communication links, visualization techniques, and services already in place at the individual AOC locations to improve the JFACC's ability to prosecute Time Sensitive Targets. Evolutionary acquisition and spiral development IAW DoDI 5000.1 and AFI 63-123 provides the opportunity to introduce advanced technologies into the AOC. There will be a continuing review of emerging technologies and products to enhance AOC capabilities. The system will be supported using existing AOC maintenance support structure (a combination of contract and organic resources). Systems Engineering and Technical Analysis (SETA) contracts will be used to support the effort.

**(U) E. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TCT Functionality Design	*											
(U) TCT Pre-Core Delivery to Field (One Site)			*									
(U) TCT Core Drop to CAOC-X (spiral)						X	X	X				
(U) TCT Core delivery to field (1st site)							X					
(U) TCT Post Core Design Review							X					
(U) TCT Post Core Drop to CAOC-X									X			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>				<b>4372</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>
(U)	TCT Software Development and Integration				15,589			21,696		1,590
(U)	Evaluation of Other Development Efforts for Future Interface/Integration				3,661					
(U)	TCT Test and Evaluation				239			2,800		800
(U)	Total				19,489			24,496		2,390
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
	Zel Technologies	CPAF	Nov 02		0	13,716	13,338	1,590	Continuing	TBD
	Comm & comp equip	Various	Nov 02		0	2,884				2,884
	TBD (Training & Integ)	TBD	Dec 03						Continuing	TBD
	TBD (Development)	TBD	Dec 03						Continuing	TBD
	FFRDC	CPAF	Dec 03				3,280		Continuing	TBD
<u>Support and Management Organizations</u>										
	FFRDC	FPAF	Nov 02		0	1,600	2,380		Continuing	TBD
	Non-FFRDC	TDB					3,248		Continuing	TBD
<u>Test and Evaluation Organizations</u>										
	Non-FFRDC		Nov 02		0	1,050	118	400	Continuing	TBD
	46TS	AF Form 616	Nov 02		0	239	621	400	Continuing	TBD
	Zel Technologies	CPAF	Nov 02		0	0	1,511	0		1,511

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
07 - Operational System Development				0207410F AEROSPACE OPERATION CENTER (AOC) 4372					
(U) <u>Government Furnished Property:</u> Contract Method/Type Award or or Funding Obligation Delivery Item Description Vehicle Date Date				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				to FY 2002	FY 2002	FY 2003	FY 2004	Complete	Program
Product Development Property Support and Management Property Test and Evaluation Property									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				to FY 2002	FY 2002	FY 2003	FY 2004	Complete	Program
Subtotal Product Development				0	16,600	16,618	1,590	TBD	TBD
Subtotal Support and Management				0	1,600	5,628		TBD	TBD
Subtotal Test and Evaluation				0	1,289	2,250	800	TBD	TBD
Total Project				0	19,489	24,496	2,390	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>					PROJECT <b>5117</b>	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
5117    Integration Development	0	46,963	25,497	33,827	49,762	48,930	73,998	47,549	Continuing	TBD	
<p>Funding provided to support AOC weapons system FY04-FY09. AOC program received an FY03 Congressional Plus-Up of \$37.2M for the purpose of integration development (BPAC 675117 Integration Development). In addition, \$9.53M was transferred from BPAC 67472 - Time Critical Targeting to fund BPAC 675117.</p> <p>(U) <b><u>A. Mission Description</u></b>                      The Aerospace Operations Center (AOC) (AN/USQ-163) enables the successful prosecution of the air campaign by Air Force, joint, and coalition leaders allowing them to make rapid and effective Command and Control (C2) decisions by providing the necessary air operations C2 and force execution tools. The AOC develops operations strategy documents, develops operations planning documents and disseminates tasking orders, executes day-to-day peacetime and combat aerospace operations, provides rapid reaction to immediate situations by exercising positive control, coordination, and deconfliction of weapon systems and assesses progress of the JFACC's aerospace support to the Joint Force Commander's (JFC) campaign, effectiveness of force employment, and efficacy of internal AOC processes. The AOC program will improve existing C2 capabilities by leveraging technology to modernize current systems and automate C2 and Intelligence, Surveillance, and Reconnaissance (ISR) processes. The AOC will also improve its capability to accurately find, fix, track, target, engage and assess (F2T2EA) Joint Force targets through expanded capabilities to access and process ISR information. This capability is required for all targets - planned or immediate, fixed or mobile. The AOC will also expand capabilities for countering all threats. The AOC program provides a necessary structure to transition and act as the focal point for a singular technical 'center of mass' for systems integration, technical transition, and process refinement for rapidly evolving C2 programs, process and concepts. Numerous independent systems inherent in the entire spectrum of command, control, and communications and Intelligence, Surveillance and Reconnaissance (ISR) battle management encompass a robust fully functioning AOC.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0                            Accomplishments/Planned Program                      (U) \$0                            Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0                            Accomplishments/Planned Program                      (U) \$10,000                    Conduct further research and engineering, lay the groundwork, and establish weapon system infrastructure for the standardization of Block upgrades and systems architecture.                      (U) \$14,365                    Initiate Block 10 AOC development and integration of legacy systems, multi-level security, visualization, and coalition interoperability.                      (U) \$22,598                    Develop and Field prototype AOC Formal Training Unit to support AOC operator initial qualification training and prototype Help Desk.                      (U) \$46,963                    Total</p>											
Project 5117			Page 8 of 12 Pages					Exhibit R-2A (PE 0207410F)			

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>	<b>PROJECT</b> <b>5117</b>
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(U) **A. Mission Description Continued**

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$12,300 Continue Block 10 AOC development and systems integration, multi-level security, visualization, and coalition interoperability.
- (U) \$1,000 Initiate Block 30 development effort.
- (U) \$4,197 Continue AOC Training development effort.
- (U) \$3,500 System Engineering/Integration
- (U) \$4,500 Program Management Support
- (U) \$25,497 Total

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

N/A

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN										
(U) Other Procurement, AF (3080)	0	0	44,054	37,096	43,623	81,082	152,998	83,319	Continuing	TBD

(U) **D. Acquisition Strategy**

Electronic Systems Center (ESC) provides program management for the AOC Weapon System. The acquisition strategy builds on existing capabilities, using evolutionary acquisition and spiral development to standardize, modernize and sustain AOCs. The acquisition approach provides for the horizontal integration of legacy C2ISR, the integration of emerging technologies, or the introduction of a revolutionary C2ISR warfighting capability. The following documents provide the requirements and guidance: Combat Air Force (CAF) Concept of Operations for Command and Control Against Time Critical Targets, July 1997; AF Mission Need Statement (MNS) for Theater Missile Defense, October 1991; JROCM 065-99, MNS for Theater Air and Missile Defense (TAMD), July 1999; Mission Need Statement (MNS) for Joint TAMD, May 1999; Program Management Directive (PMD) 2440/Program Element (PE) # 27410 for AOC; Operational Requirements Document (ORD) AFC2ISRC Time Critical Targeting Functionality, ACAT III, AFROC approved Aug 2000; ORD for AOC Modernization Program, ACAT III, JROC approved Sep 02. Evolutionary acquisition and spiral development IAW DoDI 5000.1 and AFI 63-123 provides the opportunity to introduce advanced technologies into the AOC. There will be a continuing review of emerging technologies and products to enhance AOC capabilities. The system will be supported using existing AOC maintenance support structure (a combination of contract and organic resources). Systems Engineering and Technical Analysis (SETA) contracts will be used to support the effort.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit) DATE February 2003

BUDGET ACTIVITY: 07 - Operational System Development PE NUMBER AND TITLE: 0207410F AEROSPACE OPERATION CENTER (AOC) PROJECT: 5117

(U) E. Schedule Profile

Table with columns for FY 2002 and FY 2003 (sub-columns 1-4) and FY 2004 (sub-columns 1-4). Rows include: EMD; Initiate evaluation of current applications and technologies; Initiate/continue Block 10 Spiral Development; Field prototype FTU and Help Desk; Field Block 10 increment Falconer Site 1; Field Block 10 increment Falconer Site 2; Initiate/continue Block 30 Spiral Development.

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207410F AEROSPACE OPERATION CENTER (AOC) 5117</b>
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<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>			
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Evaluation of Other Development Efforts for Future Interface/Integration	0	0	0
(U) Initiate Block 10 Development	0	14,365	12,300
(U) Initiate Block 30 AOC Development Effort			1,000
(U) Development of and Field AOC Prototype/Training/Help Desk	0	28,098	4,197
(U) Systems Engineering and Integration	0	2,000	3,500
(U) Program Management Support	0	2,500	4,500
(U) Total	0	46,963	25,497

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

**(U) Performing Organizations:**

<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
LMMS	CPAF	Mar 03	TBD	TBD			10,056	8,400	Continuing	TBD
TBD (Training & Help Desk)	TBD	Dec 03	TBD	TBD			28,098	4,197	Continuing	TBD
TBD (Development)	TBD	TBD	TBD	TBD			3,709	4,300	Continuing	TBD
<u>Support and Management Organizations</u>										
MITRE	CPAF	Dec 01	N/A	N/A			2,000	3,500	Continuing	TBD
ITSP	T&M	Dec 01	N/A	N/A			1,750	3,750	Continuing	TBD
Program Office Support	Various	N/A	N/A	N/A			750	750	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46TS	Project Order	Various	N/A	N/A			600	600	Continuing	TBD



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>			<b>0207410F AEROSPACE OPERATION CENTER (AOC)</b>		<b>5117</b>	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			41,863	16,897	TBD	TBD
Subtotal Support and Management			4,500	8,000	TBD	TBD
Subtotal Test and Evaluation			600	600	TBD	TBD
Total Project			46,963	25,497	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207412F Modular Control System</b>					PROJECT <b>485L</b>		
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
485L	Theater Air Control System Imp (TACSI)	6,625	6,472	16,083	24,664	24,438	24,379	14,560	14,480	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>            Battle Control System (BCS) Family of Systems (FOS) is comprised of fixed Homeland Defense (HLD) [BCS-Fixed (BCS-F) PE 12326F] and mobile Theater Battle Management (TBM) Command and Control (C2) nodes [BCS-Mobile (BCS-M) PE27412F]. The BCS-M is the modernization activity for the Modular Control System (MCS). The BCS-M is a low density/high demand rapidly deployable ground C2 asset conducting both deployed theater operations and homeland defense. The BCS-M is the tactical C2 execution element supporting the Joint Forces Air Component Commander (JFACC) and the North American Aerospace Defense/Combatant Commander (NORAD/CC) providing connectivity and interoperability among elements of the Theater Air Control System (TACS) to include United States Air Force, Navy, Marine Corps, Army and allied/coalition assets. It is the execution arm of the Air Operations Center (AOC). BCS modernization is using an acquisition strategy designed to ensure technical coordination with the Airborne Warning And Control System (AWACS) 40/45 upgrade, interoperability with the Region/Sector Air Operations Centers (R/SAOC) and AOC, and to further advance C2 concepts supporting current and emerging aerospace operations. BCS acquisition activities will include, but not be limited to requirements analysis, modeling and simulation, risk reduction, acquisition planning, enterprise integration, prototype development (i.e., productizing, development suite, radio/radar/data link remoting, software development), and continued development of Theater Air Defense (TAD) Missile Tracking System (MTS), incorporating the fixed and mobile radar requirements for the air picture under one Operational Requirements Document (ORD) for BCS, transitioning the Area Cruise Missile Defense (ACMD) Advanced Capabilities Technology Demonstration (ACTD) into BCS Modernization, and leveraging capabilities from BCS-F and AWACS 40/45.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$3,993 Continued Concept Definition/Development of Evolutionary Upgrades to the BCS-M (to include, but not be limited to, advanced planning, Modular Control Equipment (MCE) Upgrades enhanced radio/radar/data link remoting, misc.)</p> <p>(U) \$584 Continued Program Support (i.e., travel, supplies, equipment, miscellaneous)</p> <p>(U) \$1,558 Completed development of TAD MTS Upgrade for the Radar Sensors</p> <p>(U) \$490 Continued Systems Engineering</p> <p>(U) \$6,625 Total</p>											
Project 485L			Page 1 of 6 Pages					Exhibit R-2 (PE 0207412F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE <b>February 2003</b>		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0207412F Modular Control System</b>	<b>485L</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$0	Accomplishments/Planned Program			
(U) \$5,681	Continue Concept Definition/Development of evolutionary upgrades to the BCS to include, but not be limited to, advanced planning, MCE Upgrades, enhanced radio/radar/data link remoting			
(U) \$575	Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)			
(U) \$216	Continue Systems Engineering			
(U) \$6,472	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>				
(U) \$0	Accomplishments/Planned Program			
(U) \$15,273	Continue Concept Definition/Development of Evolutionary Upgrades to the BCS-M to include, but not be limited to, advanced planning, MCE Upgrades, enhanced radio/radar/data link remoting, ACMD/ACDT transition into BCS-M, leveraging capabilities from BCS-F and AWACS 40/45, integrating evolutionary upgrades into BCS-M, and misc.			
(U) \$480	Continue Program Support (i.e., travel, supplies, equipment, miscellaneous)			
(U) \$330	Continue Systems Engineering			
(U) \$16,083	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
The program is in Budget Activity 7 because Modular Control System (MCS) is a fielded, operational system.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	6,749	6,652	4,687	TBD
(U) Appropriated Value	7,047	6,652		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-79	-114		
b. Small Business Innovative Research	-193			
c. Omnibus or Other Above Threshold Reprogram		-66		
d. Below Threshold Reprogram	-150			
e. Rescissions				
 Project 485L				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003			
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207412F Modular Control System</b>				PROJECT <b>485L</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>			<u>Total Cost</u>
(U)	Adjustments to Budget Years Since FY 2003 PBR						11,396			
(U)	Current Budget Submit/FY 2004 PBR			6,625	6,472	16,083				TBD
(U)	<u>Significant Program Changes:</u>									
	This document reflects the addition of \$66M across the FYDP to continue Evolutionary Upgrades to the Battle Control System-Mobile (BCS-M).									
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	Other APPN									
(U)	Other Procurement Air Force, WSC 833040, Theater Air Control System Improvement	10,431	11,561	18,987	27,374	43,410	38,650	38,611	38,480	Continuing
(U)	Other Procurement Air Force, WSC 838010, Comm Electronic Mods	2,381	586							TBD
(U)	Other Procurement Air Force, WSC 86190A, Initial Spares	1,067	419	373	85	0	0			Continuing
(U)	<b>E. Acquisition Strategy</b>									
	1. The Battle Control System (BCS) Program Family of Systems is utilizing a spiral development acquisition strategy to further advance C2 concepts supporting future aerospace operations. This strategy improves warfighting capabilities, better utilizes Low Density/High Demand (LD/HD) crews, enables C2ISR data fusion and forwarding, and fully supports the enterprise integration strategy.									
	2. BCS-Mobile (BCS-M) Modernization will transition the Area Cruise Missile Defense (ACMD) Advanced Capabilities Technology Demonstration (ACTD) capabilities. BCS-M will leverage capabilities from BCS-Fixed (BCS-F), AWACS 40/45 and integrate evolutionary upgrades from legacy Modular Control System (MCS) into BCS-M. This strategy satisfies the long-term modernization solution for a command and control (C2) BCS family of systems that incorporates a common hardware/battle management software solution for BCS-Fixed and BCS-Mobile air defense and air sovereignty C2 platforms.									
Project 485L		Page 3 of 6 Pages					Exhibit R-2 (PE 0207412F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0207412F Modular Control System</b>					<b>485L</b>			
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U) TAD MTS Software Build 4		*											
(U) TAD MTS Developmental Test & Evaluation (DT&E)				*									
(U) TAD MTS Operational Test & Evaluation (OT&E)				*									
(U) TAD MTS Milestone 3 Production Decision					*								
(U) Radio Remote (RR) Secure Voice Adapter Integration		*											
(U) RR Spiral 1 Follow-On Test & Evaluation (FOT&E)				*									
(U) RR Milestone 3 Production Decision					*								
(U) RR Spiral 2A (Radio Control) Contract Award					*								
(U) RR Spiral 2A Developmental Test & Evaluation (DT&E)								X					
(U) RR Spiral 2A Operational Test & Evaluation (OT&E)								X					
(U) RR Spiral 2B (External Radio Operations) Contract Award						X							
(U) BCS-M Concept Evaluation							X						
(U) BCS-M Contract Award									X				
(U) BCS-M Test												X	
* Denotes completed event													
x Denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207412F Modular Control System</b>			<b>485L</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Program Support (i.e. travel, supplies, and miscellaneous)					584		575		480
(U)	Systems Engineering					490		216		330
(U)	Concept Definition/Development for Evolutionary Upgrades to the BCS to include enhanced radio/radar remoting, and misc. (includes dedicated Evolutionary Upgrades direct mission support)					3,993		5,681		15,273
(U)	Development of TAD MTS Upgrade for the Radar Sensors (includes dedicated TAD MTS direct mission support)					1,558				
(U)	Total					6,625		6,472		16,083
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Contractor Northrop Grumman, Baltimore - TAD MTS	FFP	1QFY01	17,303	17,303	14,688	1,558	0	0	0	16,246
Rome Labs & NAWCAD - Concept Definition/Development of Evolutionary Upgrades	MIPR	2QFY01	N/A	N/A	6,762	3,993	5,681	3,869	Continuing	TBD
TBD - BCS-M	TBD	1QFY04	TBD	TBD	0	0	0	11,404	Continuing	TBD
<u>Support and Management Organizations</u>										
Miscellaneous program support (travel, supplies, etc.)	Various	Various	N/A	N/A	1,029	584	575	480	Continuing	TBD
Systems Engineering.	Various	Various	N/A	N/A	530	490	216	330	Continuing	TBD
Project 485L					Page 5 of 6 Pages			Exhibit R-3 (PE 0207412F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207412F Modular Control System			PROJECT 485L	
<b>(U) Performing Organizations Continued:</b>								
<u>Test and Evaluation Organizations</u>								
GFP/GFE: None								
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
<u>Product Development Property</u>								
None								
<u>Support and Management Property</u>								
None								
<u>Test and Evaluation Property</u>								
None								
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
Subtotal Product Development				21,450	5,551	5,681	15,273	TBD
Subtotal Support and Management				1,559	1,074	791	810	TBD
Subtotal Test and Evaluation								
Total Project				23,009	6,625	6,472	16,083	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207417F Airborne Warning and Control System (AWACS)					PROJECT 411L	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
411L	Airborne Warning & Control System (AWACS)	36,732	169,649	270,397	289,544	131,666	85,754	83,295	74,334	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 The funding set forth in this document investigates, develops, and integrates system improvements to enable the E-3 AWACS to remain an effective Battle Management airborne surveillance system for command and control of combat forces and for strategic defense of the U.S. This PE funds the following efforts:

Modernization Programs: (3600)

1) The Integrated DAMA (Demand Assigned Multiple Access)/GATM (Global Air Traffic Management) Program seeks to make communications and navigation improvements required to meet current mandated DAMA SATCOM (Satellite Communication) and Air Traffic Control (ATC) requirements. This mod consolidates Mod # T8135 - SATCOM DAMA and Mod # 3404 - ATC Compliance, in order to reduce modification schedule and cost.

A) DAMA SATCOM is a CJCS mandated Ultra-High Frequency (UHF) satellite communications upgrade consisting of two new UHF DAMA terminals and new RF components, to mitigate co-site interference, replacing the two non-DAMA UHF SATCOM radios on each aircraft. The DAMA enhancements will expand user availability of severely limited DoD UHF SATCOM channels, improving the interoperability and efficiency of DoD UHF SATCOM systems.

B) GATM is an FAA/International Civil Aviation Organization (ICAO)/EUROCONTROL mandated ATC upgrade consisting of new VHF radios with 8.33 kHz channel spacing, Aircraft Collision Avoidance System (ACAS)/Mode-S IFF and Reduced Vertical Separation Minimum (RVSM) capability. The ATC enhancements will permit more aircraft to fly closer together in congested airspace worldwide, particularly in European airspace. Non-compliance already results in airspace restrictions and denials, impacting AWACS' ability to support worldwide response in situations requiring immediate on-scene command and control (C2) battle management.

2) Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve quality and timeliness of sensor data to the shooter,

Project 411L Page 1 of 8 Pages Exhibit R-2 (PE 0207417F)



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		PROJECT <b>411L</b>
PE NUMBER AND TITLE <b>0207417F Airborne Warning and Control System (AWACS)</b>		
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>improve Combat Identification (CID), provide sensor fusion capability in support of the Single Integrated Air Picture (SIAP) via multi-sensor integration (MSI), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure, resolve radar electronics DMS, and enable more effective, faster upgrades via an open systems architecture. The Block 40/45 risk reduction effort continues in FY03 to drive down the risk of utilizing new technology to meet the AWACS Block 40/45 Operational Requirements Document (ORD). Some of the risk reduction efforts include modeling and simulation, requirements analysis, rapid prototyping, architecture trades, and designing a Commercial Off the Shelf (COTS) insertion process. Block 40/45 transitions from risk reduction to System Development and Demonstration (SD&amp;D) during FY03.</p> <p>3) Command &amp; Control, Intelligence, Surveillance and Reconnaissance (C2ISR): C2ISR System Architecture Improvements provide timely enhancements to improve critical areas of the AWACS mission system, primarily in three areas:</p> <p>A) Mission Capable (MC) rate improvement : Reliability, Maintainability, &amp; Availability (RM&amp;A) analysis and development projects provide system improvements that boost the below-standard MC rate of this critical C2 platform and increase airframe longevity in order to support its flight commitment to end of operational life. Such efforts focus on increasing reliability of the air vehicle, command, control, computer, sensor systems and infrastructure improvements as well as providing solutions to diminishing manufacturing sources. Efforts will also focus on reduction of maintenance man-hours along with periodic depot maintenance improvements to increase aircraft availability. Programs will focus on risk reduction, development, and fielding.</p> <p>B) C2ISR enhancement and integration: AWACS seeks to fulfill the requirements of Joint Vision 2020, Real Time Defense Information Infrastructure Common Operating Environment (DII COE), as well as Expeditionary Air Force (EAF) and other Task Force Concept of Operations to meet the needs of the operator. AWACS seeks to enhance network-centric warfare capabilities with other C2ISR systems by horizontally integrating machine-to-machine interfaces into AWACS in order to digitize the kill chain. Sensor and communications improvements, such as the ability to send, receive and fuse the air (and ground) picture via data link to fighter aircraft, will be developed through rapid prototyping, modeling, simulation, and participation in live and simulated Joint exercises (e.g., JCIET, Joint Distributed Engineering Plant (JDEP)). Collaborative efforts with other sensor platforms through capabilities such as Network Centric Collaborative Targeting (NCCT) will also enhance horizontal integration efforts. Certain near-term efforts, required by the operator to improve the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone and to provide consistent and replayable mission data once the mission is complete, are quick reaction capabilities that can be developed &amp; fielded to support the next air war. The program includes concept exploration, technology development and demonstration efforts that support continuous improvements to C2ISR capabilities of manned &amp; unmanned platforms, space, data links and advanced Battle Management Command, Control and Communications concepts. C2ISR continues to support and develop self-protection capabilities to enable current and future threat deterrence. Fielding strategies will provide for immediate field retrofit when able, otherwise fielding will occur in subsequent modernization programs. All programs are designed to integrate with &amp; transition into</p>		
Project 411L	Page 2 of 8 Pages	Exhibit R-2 (PE 0207417F)

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

DATE February 2003

BUDGET ACTIVITY  
07 - Operational System Development

PE NUMBER AND TITLE  
0207417F Airborne Warning and Control System  
(AWACS)

PROJECT  
411L

(U) A. Mission Description Continued  
the next C2ISR platform.

C) The Training, Support, and Infrastructure programs cover an array of cross cutting programs and activities in support of AWACS modification and enhancement programs. These programs include managing the AWACS developmental infrastructure, support equipment development, modernization planning and analysis, and trainer and simulator integration and concurrency. The Radar Systems Integration Lab/Software Development Facility (SIL/SDF) must be maintained, operated and supported by contract to provide customers with a functioning APY 1/2 radar configuration in support of AWACS radar development, production and sustainment programs. The SIL/SDF is funded within the Radar System Improvement Program (RSIP) through FY04. The supportability effort will analyze future diagnostic support equipment technologies and test strategies to ensure concurrent capability to sustain current, modified and upgraded E-3 equipment. Trainer and simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline. Associate contractor agreements are needed to establish engineering concurrency between prime integrators and training service providers.

4) Test System 3/Integration Labs: The E-3 AWACS testbed aircraft, Test System 3 (TS-3, tail number 73-1674), the Avionics Integration Laboratory (AIL), and the AWACS Development Laboratory (ADL) are Government owned/contractor managed, maintained and operated assets. These test-ready assets support AWACS modernization and sustainment programs, including advanced projects, and allow AWACS to participate in live-fly and ground-based simulation exercises such as JEFX and JDEP. They also support multiple international projects, including French, RSAF and NATO projects.

5) NAVWAR (Navigation Warfare) is mandated by CJCSI 6140.01 (15 Nov 98) and requires all DoD GPS users to incorporate NSA Selective Availability Anti-Spoofing Module (SAASM), make provisions for the transition to 'black keys', eliminate requirements to acquire GPS satellites using the civil signal (C/A) and incorporate new technology into the navigation sensor. AMP (Avionics Modernization Program) completes the FAA/ICAO/EUROCONTROL mandated air traffic control system upgrades and equips the E-3 fleet with flight deck and other avionics capabilities that will allow AWACS to comply with mandated global Required Navigation Performance (RNP) surveillance and communication standards. Non-compliance will result in airspace restrictions and denials which will impact AWACS' ability to support worldwide responses to situations requiring immediate on-scene C2 battle management. The AMP modifications to the flight deck include the addition of data link communications, voice and data link digital radios, improved visual displays and flight management system, as well as automatic position reporting via data link. Replacement of critical avionics subsystems, unsustainable beyond 2010, will be included in the AMP. The program will focus on risk reduction, development and fielding. This mod was previously Mod # 9709 - Global Air Traffic Management (GATM) Phase II.

In last year's budget documents, HF Messenger was listed as a Research and Development project. It was determined that it did not require RDT&E funding. The RDT&E funding was reallocated within the PE. HF Messenger is covered in Procurement Documentation Mod # 3403.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE																																				
BUDGET ACTIVITY <b>07 - Operational System Development</b>		February 2003																																				
PE NUMBER AND TITLE <b>0207417F Airborne Warning and Control System (AWACS)</b>		PROJECT <b>411L</b>																																				
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Programs</td> </tr> <tr> <td>(U) \$4,317</td> <td>Continuing C2ISR System Architecture Improvements</td> </tr> <tr> <td>(U) \$15,855</td> <td>Continuing Test System-3/AITS support and program sustaining efforts</td> </tr> <tr> <td>(U) \$8,862</td> <td>Continuing Block 40/45 Risk Reduction effort</td> </tr> <tr> <td>(U) \$7,698</td> <td>Starting Integrated DAMA/GATM (IDG) SD&amp;D (combination of ATC Compliance &amp; SATCOM DAMA)</td> </tr> <tr> <td>(U) \$36,732</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Programs</td> </tr> <tr> <td>(U) \$5,208</td> <td>Continuing C2ISR System Architecture Improvements</td> </tr> <tr> <td>(U) \$24,960</td> <td>Continuing Test System-3/AITS support and program sustaining efforts</td> </tr> <tr> <td>(U) \$115,668</td> <td>Completing Block 40/45 Risk Reduction effort, starting SD&amp;D effort</td> </tr> <tr> <td>(U) \$23,813</td> <td>Continuing Integrated DAMA/GATM (IDG) SDD (combination of ATC Compliance &amp; SATCOM DAMA)</td> </tr> <tr> <td>(U) \$169,649</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$0</td> <td>Accomplishments/Planned Programs</td> </tr> <tr> <td>(U) \$3,844</td> <td>Continuing C2ISR System Architecture Improvements, Advanced Projects</td> </tr> <tr> <td>(U) \$18,077</td> <td>Continuing Test System-3/AITS support and program sustaining efforts</td> </tr> <tr> <td>(U) \$221,404</td> <td>Continuing Block 40/45 SD&amp;D effort</td> </tr> <tr> <td>(U) \$27,072</td> <td>Continuing Integrated DAMA/GATM (IDG) SD&amp;D, lab and flight testing</td> </tr> <tr> <td>(U) \$270,397</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b>            Operational Systems Development, Budget Activity 7. AWACS is a fielded, operational system currently undergoing major modifications/block upgrades and continuing sustainment activities.</p>			(U) \$0	Accomplishments/Planned Programs	(U) \$4,317	Continuing C2ISR System Architecture Improvements	(U) \$15,855	Continuing Test System-3/AITS support and program sustaining efforts	(U) \$8,862	Continuing Block 40/45 Risk Reduction effort	(U) \$7,698	Starting Integrated DAMA/GATM (IDG) SD&D (combination of ATC Compliance & SATCOM DAMA)	(U) \$36,732	Total	(U) \$0	Accomplishments/Planned Programs	(U) \$5,208	Continuing C2ISR System Architecture Improvements	(U) \$24,960	Continuing Test System-3/AITS support and program sustaining efforts	(U) \$115,668	Completing Block 40/45 Risk Reduction effort, starting SD&D effort	(U) \$23,813	Continuing Integrated DAMA/GATM (IDG) SDD (combination of ATC Compliance & SATCOM DAMA)	(U) \$169,649	Total	(U) \$0	Accomplishments/Planned Programs	(U) \$3,844	Continuing C2ISR System Architecture Improvements, Advanced Projects	(U) \$18,077	Continuing Test System-3/AITS support and program sustaining efforts	(U) \$221,404	Continuing Block 40/45 SD&D effort	(U) \$27,072	Continuing Integrated DAMA/GATM (IDG) SD&D, lab and flight testing	(U) \$270,397	Total
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(U) \$270,397	Total																																					
Project 411L	Page 4 of 8 Pages	Exhibit R-2 (PE 0207417F)																																				

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207417F Airborne Warning and Control System</b> <b>(AWACS)</b>	<b>PROJECT</b> <b>411L</b>
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(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	38,972	173,956	294,100	TBD
(U) Appropriated Value	39,787	173,956		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-815	-2,589		
b. Small Business Innovative Research	-1,087			
c. Omnibus or Other Above Threshold Reprogram		-1,718		
d. Below Threshold Reprogram	-973			
e. Rescissions	-180			
(U) Adjustments to Budget Years Since FY 2003 PBR			-23,703	
(U) Current Budget Submit/FY 2004 PBR	36,732	169,649	270,397	TBD

(U) **Significant Program Changes:**

Funds were reduced in FY04 from Block 40/45 System Development & Demonstration to support other Air Force efforts. Block 40/45 remains executable. Additionally, Tactical Data Link (TDL) funds were transferred to the TDL Program Element to help establish this PE. These TDL funds remain linked to AWACS.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Aircraft Procurement, AF, E-3 Mods	90,069	28,089	53,467	37,869	57,580	146,008	186,243	172,928		TBD
(U) E-3 Initial Spares, AF	28,344	5,393	8,324	4,922	4,980	7,169	7,411	7,590		TBD
(U) Replacement Supt Equip										

(U) **E. Acquisition Strategy**

Most major programs (IDG, Block 40/45, TS-3 and lab support) will be sole source to Boeing aircraft in Seattle, Wa.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development					0207417F Airborne Warning and Control System (AWACS)					411L		
(U) <b><u>F. Schedule Profile</u></b>												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) BLOCK 30/35 FOC	*											
(U) BLOCK 40/45 Risk Reduction Start	*											
(U) IDG SD&D Start			*									
(U) BLOCK 40/45 MILESTONE B						X						
(U) BLOCK 40/45 SD&D Start						X						
(U) BLOCK 40/45 Risk Reduction Complete								X				
(U) IDG AIL Integration & Testing Start									X			
(U) IDG Test Aircraft Modification Start									X			
(U) 40/45 Initial Design & Manufacturing Review (IDMR)										X		
(U) IDG Ground & Flight Testing											X	
(U) IDG Production Decision												X
(U) 40/45 Final Design & Manufacturing Review (FDMR)												X
* Denotes completed events												
X Denotes planned events												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0207417F Airborne Warning and Control System</b>				<b>411L</b>	
					<b>(AWACS)</b>					
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Contracts					26,184		153,331		256,605
(U)	MITRE/ITSP					5,920		8,423		9,634
(U)	Travel					669		678		746
(U)	Other					3,959		7,217		3,412
(U)	Total					36,732		169,649		270,397
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
(U)	Boeing (Block 40/45 Risk CPAF Reduction)	10/01	N/A	N/A	28,510	8,999	91,195		0	128,704
(U)	Boeing (Block 40/45 SD&D)	CPAF 06/03	N/A	N/A	0	0	22,286	218,863	Continuing	TBD
(U)	Boeing (PDMA)*	Multiple N/A	N/A	N/A	58,149				Continuing	TBD
(U)	Boeing (C2ISR Sys Arch Imp)	FPIF/CPAF N/A	N/A	N/A	35,876	2,303	2,331	628	Continuing	TBD
(U)	Boeing ( IDG )	Multiple 04/02	N/A	N/A	0	6,467	19,963	25,695	0	52,125
(U)	Boeing NAVWAR/AMP	Multiple TBD	N/A	N/A	0	0	0	0	Continuing	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207417F Airborne Warning and Control System</b> <b>(AWACS)</b>	<b>PROJECT</b> <b>411L</b>
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**(U) Performing Organizations Continued:**

\* N/A based on Program Depot Maintenance Airframe (PDMA) Acquisition Strategy which includes multiple contracts with multiple organizations with overlapping and continuing performance periods.

Note: Total Program does not include NATO funds.

**Support and Management Organizations**

(U) Support/ITSP	Multiple	N/A	N/A	N/A	573,037	10,101	21,349	11,753	Continuing	TBD
MITRE, travel, other	contracts									

**Test and Evaluation Organizations**

(U) Test System-3 ADAPT	Multiple	N/A	N/A	N/A	370,745	8,862	12,525	13,458	Continuing	TBD
Contract/AITS Contract /										
Other test activities										

**(U) Government Furnished Property:**

<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Vehicle</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<b>Subtotals</b>				<b><u>Total Prior</u></b>	<b><u>Budget</u></b>	<b><u>Budget</u></b>	<b><u>Budget</u></b>	<b><u>Budget to</u></b>	<b><u>Total</u></b>
Subtotal Product Development				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Support and Management				122,535	17,769	135,775	245,186	TBD	TBD
Subtotal Test and Evaluation				573,037	10,101	21,349	11,753	TBD	TBD
Total Project				370,745	8,862	12,525	13,458	TBD	TBD
				1,066,317	36,732	169,649	270,397	TBD	TBD

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

DATE

**February 2003**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207423F Advanced Communications Systems**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9,596	28,485	12,312	2,619	2,395	0	5,923	6,370	Continuing	TBD
4934 Tactical Air Control Party (TACP)	9,596	28,485	12,312	2,619	2,395	0	5,923	6,370	Continuing	TBD
5084 AJCN	0	0	0	0	0	0	0	0	0	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD

**(U) A. Mission Description**

TACPs are equipped with various communications and support gear needed to interface with both ground forces and aircraft conducting air operations, aerospace command and control (C2) agencies; including AWACS and Intelligence, Surveillance and Reconnaissance (ISR) agencies. TACPs advise the ground commander and staff on the capabilities and use of aerospace power and assist them in planning for air support operations. The TACP Modernization (TACP-M) program is intended to improve situational awareness, increase targeting accuracy, reduce kill chain decision time, provide more mobility and flexibility, improve data flows/information exchange and increase joint and multinational interoperability and reduce fratricide. The first phase provides the Dismounted capability via a streamlined acquisition using an off-the-shelf non-developmental PRC-117F Manpack Radio (MPR), Mark VII Laser Range Finder (LRF), and Ruggedized Mission Computer combined with TACP-M Situational Awareness Software. The MPR provides beyond line of sight voice and data communications with the Army and Air Force CAS aircraft. The second phase will provide a Vehicular Communications System (VCS) capability through the Army's Cluster 1 Joint Tactical Radio System (JTRS) program.

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

This program is in budget activity 7, Operational System Development RDT&E, AF since it examines appropriate emerging technologies for the continuing spiral development of commercial off-the-shelf (COTS) equipment; provide software development, and determines and resolves integration issues pertaining to COTS equipment



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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207423F Advanced Communications Systems</b>
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	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b>				
(U) Previous President's Budget	9,126	29,133	4,641	TBD
(U) Appropriated Value	9,324	28,773		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-198			
b. Small Business Innovative Research	-255			
c. Omnibus or Other Above Threshold Reprogram		-288		
d. Below Threshold Reprogram	1,228			
e. Rescissions	-47			
(U) Adjustments to Budget Years Since FY 2003 PBR	-456		7,671	
(U) Current Budget Submit/FY 2004 PBR	9,596	28,485	12,312	TBD
(U) <u>Significant Program Changes:</u> Not Applicable				

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207423F Advanced Communications Systems</b>					PROJECT <b>4934</b>		
COST (\$ in Thousands)			FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4934	Tactical Air Control Party (TACP)		9,596	28,485	12,312	2,619	2,395	0	5,923	6,370	0	TBD

**(U) A. Mission Description**

Tactical Air Control Party (TACP) provide numerous critical functions across the battlespace. They advise the warfighter on aircraft employment; coordinate and control aerospace operations and participate in battle planning. TACPs are equipped with various communications and support gear needed to interface with both ground forces and aircraft conducting air operations, aerospace command and control (C2) agencies; including AWACS and Intelligence, Surveillance and Reconnaissance (ISR) agencies. TACPs advise the ground commander and staff on the capabilities and use of aerospace power and assist them in planning for air support operations. TACPs provide United States Air Force (USAF) Tactics, Techniques and Procedures (TTP) expertise and a focal point for detailed integration of Close Air Support (CAS) with the fire and maneuver of ground forces. TACP tasks include requesting/coordinating aerospace missions, integrating aerospace and ground force plans, target marking and Suppression of Enemy Air Defenses (SEAD) control. To accomplish this, they use a mix of vehicle mounted communications pallets, Manpack Radios (MPRs), Laser Range Finders (LRF) and computers with associated informational software.

The Air Force fully supports the Joint Tactical Radio System (JTRS) procurement acquisition strategy and is a participant in the Army led JTRS Cluster 1 initiative. FY02-04 funds will be used to support the TACP-M Cluster 1 requirements.

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

- (U) \$5,872** Begin developing JTRS compliant TACP-M Vehicular Communication System (VCS) hardware in conjunction with the Army's Cluster 1
- (U) \$3,011** Software development and system integration begins.
- (U) \$713** Operational and interoperability test planning.
- (U) \$9,596** Total

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

- (U) \$19,140** Continue JTRS compliant TACP Vehicular Communication System (VCS) hardware in conjunction with Army's JTRS Cluster 1.
- (U) \$8,745** Software development and System integration.
- (U) \$600** Operational and interoperability test planning.
- (U) \$28,485** Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT					
<b>07 - Operational System Development</b>				<b>0207423F Advanced Communications Systems</b>				<b>4934</b>					
<b>(U) <u>A. Mission Description Continued</u></b>													
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>													
(U)	\$9,988	Continue JTRS compliant TACP Vehicular Communication System (VCS) hardware in conjunction with Army's JTRS Cluster 1.											
(U)	\$1,774	Software development and System integration.											
(U)	\$550	Operational and interoperability test planning.											
(U)	\$12,312	Total											
<b>(U) <u>B. Project Change Summary</u></b>													
FY 02 funding was reallocated internally within this PE from Other Procurement, Air Force (OPAF) to RDT&E, Air Force appropriation to support Dismounted and VCS Software Development and Integration activities. This reallocation was driven by June 2002 Defense Acquisition Board (DAB) direction to fund to the Army's JTRS Cluster 1 Joint Cost Position.													
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U)	Other APPN PE 27423F	18,062	12,050	3,993	8,713	23,858	21,764	67,187	68,477	Continuing	TBD		
<b>(U) <u>D. Acquisition Strategy</u></b>													
All major contracts within this Program Element and BPAC have been awarded after full and open competition.													
<b>(U) <u>E. Schedule Profile</u></b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	VCS JTRS Cluster 1 RFP Release	*											
(U)	VCS JTRS Cluster 1 Contract Award					*							
(U)	VCS JTRS Radio Development begins						*						
(U)	Software Development Contract Award							*					
(U)	Start Operational Test Planning	*											
(U)	Operational Testing - Spiral 0			*									
(U)	Operational Testing - Spiral 1									X			
	* = Activity complete												
Project 4934				Page 4 of 6 Pages				Exhibit R-2A (PE 0207423F)					

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003																										
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																										
<b>07 - Operational System Development</b>					<b>0207423F Advanced Communications Systems</b>					<b>4934</b>																										
<b>(U) E. Schedule Profile Continued</b>																																				
<table style="width:100%; border: none;"> <tr> <td></td> <td align="center" colspan="3"><u>FY 2002</u></td> <td></td> <td align="center" colspan="3"><u>FY 2003</u></td> <td></td> <td align="center" colspan="3"><u>FY 2004</u></td> </tr> <tr> <td></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> <td align="center">1</td> <td align="center">2</td> <td align="center">3</td> <td align="center">4</td> </tr> </table>													<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4
	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>																											
	1	2	3	4	1	2	3	4	1	2	3	4																								
X = Activity has not been completed																																				
Project 4934				Page 5 of 6 Pages				Exhibit R-2A (PE 0207423F)																												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207423F Advanced Communications Systems</b>			<b>4934</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Engineering Support					904		1,213		1,223
(U)	VCS JTRS Compliant Radio Development					5,092		18,327		9,285
(U)	Software development and System Integration					2,875		8,270		1,250
(U)	Travel					150		130		130
(U)	Test					575		545		424
(U)	Total					9,596		28,485		12,312
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing Cluster 1	CPAF	24 Jun 02	TBD	TBD	0	5,092	18,975	9,659	Continuing	TBD
ESC Sys Int Software Dev't	T&M	27 Nov 02	TBD	TBD	0	2,875	7,622	1,138	Continuing	TBD
<u>Support and Management Organizations</u>										
ESC	FFP	Varies			0	1,054	1,343	1,040	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
JITC / 605th TS / 46th TS					0	575	545	475	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	7,967	26,597	10,797	TBD	TBD
Subtotal Support and Management					0	1,054	1,343	1,040	TBD	TBD
Subtotal Test and Evaluation					0	575	545	475	TBD	TBD
Total Project					0	9,596	28,485	12,312	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I						
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	37,848	33,828	31,647	31,303	40,375	40,892	37,169	37,846	Continuing	TBD
3330 Cmd Control Info Process Sys (C2IPS)	1,996	2,254	0	0	0	0	0	0	0	51,332
4790 Theater Battle Management Core System (TBMCS)	23,765	21,358	21,455	20,903	29,763	30,093	26,075	26,577	Continuing	TBD
4802 Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	12,087	10,216	10,192	10,400	10,612	10,799	11,094	11,269	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	Continuing	TBD

Note: Also received additional \$3.0 million funded by FY02 Defense Emergency Response Fund (DERF) to support urgent software service pack releases and technical support to contingency operations (Enduring Freedom/Noble Eagle).

(U) **A. Mission Description**  
 TBM C4I develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) Common Operating Environment (COE). Acquisition of these systems supports the Air Force's expeditionary force concept and will allow the execution of Theater Battle Management (TBM) planning, intelligence, and operational functions of the Joint Forces Air Component Commander (JFACC). Those functions include: generation and dissemination of the air tasking order (ATO) from the Air Operations Center (AOC) down to the wing and unit levels; aerospace defense planning and execution; airspace deconfliction; targeting and weaponeering; and many other applications supporting air operations command and control. Projects included in this program element are Command & Control Information Processing System (C2IPS), Theater Battle Management Core Systems (TBMCS) (including the Family of Interoperable Operational Pictures (FIOP) initiative), and Deliberate and Crisis Action Planning and Execution Segment (DCAPES).

(U) **B. Budget Activity Justification**  
 The TBMCS effort is post Milestone III effort, and is in Budget Activity 7, Operational Systems Development because it incrementally upgrades and develops capabilities for currently operational systems.

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

DATE  
**February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0207438F Theater Battle Management (TBM) C4I**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	37,469	34,700	30,175	TBD
(U) Appropriated Value	38,331	34,700		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-862	-529		
b. Small Business Innovative Research	-1,047			
c. Omnibus or Other Above Threshold Reprogram		-343		
d. Below Threshold Reprogram	1,611			
e. Rescissions	-185			
(U) Adjustments to Budget Years Since FY 2003 PBR			1,472	
(U) Current Budget Submit/FY 2004 PBR	37,848	33,828	31,647	TBD
(U) <u>Significant Program Changes:</u>				

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>					PROJECT <b>3330</b>
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3330    Cmd Ctrl Info Process Sys (C2IPS)	1,996	2,254	0	0	0	0	0	0	0	51,332
<p>(U) <b><u>A. Mission Description</u></b>                      The Command &amp; Control Information Processing System (C2IPS) project develops communications and information processing hardware and software for all echelons of the Air Mobility Command (AMC). C2IPS provides AMC the automated capability to perform command and control functions associated with planning, scheduling, and global execution and monitoring of airlift and air refueling missions consisting of both fixed and deployable nodes. C2IPS satisfies the warfighters needs for horizontal and vertical communication.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>                      (U) \$0                      Accomplishments/Planned Programs                      (U) \$1,996                Completion of Increment 4 (Detailed Planning &amp; Scheduling for integration of AMC aircraft schedules)                      (U) \$1,996                Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>                      (U) \$0                      Accomplishments/Planned Programs                      (U) \$2,254                Increment 4 software deficiency reports cleanup                      (U) \$2,254                Total</p> <p>(U) <b><u>FY 2004 (\$ in Thousands)</u></b>                      (U) \$0                      Accomplishments/Planned Programs                      (U) \$0                      No Activity                      (U) \$0                      Total</p> <p>(U) <b><u>B. Project Change Summary</u></b>                      N/A</p>										
Project 3330			Page 3 of 14 Pages				Exhibit R-2A (PE 0207438F)			



<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2003</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>			PROJECT <b>3330</b>					
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E													
(U) Other APPN													
<b>(U) D. Acquisition Strategy</b>													
The C2IPS is developed and installed in four increments. A spiral development process is used to produce consecutive software releases within each increment. Increment 1 provided a digital data message handling capability at each Information Processing System (IPS) node and implements mission execution monitoring. Increment 2 built on Increment 1 software to support mission planning and scheduling. Increment 3 provided C2IPS with a client server architecture as part of the system migration efforts. Increment 4 continues the final year work on migration-interoperability between C2IPS-TBMCS within BPAC 673330.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Increment 4 Completion Dates													
(U) Spiral A (Planning & Sched)													
(U) Spiral B (Plan & Sched, DII/COE)													
(U) Spiral C (Planning & Scheduling)				*									
(U) Continue C2IPS-TBMCS interoperability (resolve outstanding reports)							X						
Note 1: * Denotes Completed Event; X Denotes Planned Event													
Note 2: Project is scheduled to be completed in FY03													
Project 3330			Page 4 of 14 Pages				Exhibit R-2A (PE 0207438F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207438F Theater Battle Management (TBM) C4I</b>			<b>3330</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Major Product Development Contracts					1,621		1,706		
(U)	Support Contracts					225		343		
(U)	Program Management Support					150		205		
(U)	Total					1,996		2,254		
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
CSC	FPIF	Dec 88	TBD	TBD	27,991	1,621	1,706		0	31,318
Unisys	IDIQ	Dec 98	TBD	TBD	7,925	0	0		0	7,925
<u>Support and Management Organizations</u>										
MITRE	T&M	Oct 94	N/A	N/A	7,275	0	0		0	7,275
TEMS/ITSP	Various	Various	N/A	N/A	2,099	225	343		0	2,667
ESC (government organization)	n/a	n/a	N/A	N/A	1,792	150	205		0	2,147
<u>Test and Evaluation Organizations</u>										
N/A										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					35,916	1,621	1,706		0	39,243
Subtotal Support and Management					11,166	375	548		0	12,089
Subtotal Test and Evaluation										
Total Project					47,082	1,996	2,254		0	51,332

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207438F Theater Battle Management (TBM) C4I</b>						<b>PROJECT</b> <b>4790</b>	
<b>COST (\$ in Thousands)</b>		<b>FY 2002 Actual</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>FY 2008 Estimate</b>	<b>FY 2009 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
4790	Theater Battle Management Core System (TBMCS)	23,765	21,358	21,455	20,903	29,763	30,093	26,075	26,577	Continuing	TBD

Note: Also received additional \$3.0 million funded by FY02 Defense Emergency Response Fund (DERF) to support urgent software service pack releases and technical support to contingency operations (Enduring Freedom/Noble Eagle).

**(U) A. Mission Description**

The Theater Battle Management Core Systems (TBMCS) develops force-level and wing-level command, control, and intelligence systems which utilize DoD's Defense Information Infrastructure (DII) Common Operating Environment (COE) and Joint Technical Architecture (JTA). It links planning, intelligence and operations functions in an integrated battle management system for planning and executing the air war at the theater level and evaluates future aerospace command and control concepts identified and incorporated via evolutionary acquisition. Functions supported include: generation and dissemination of the air tasking order in support of the Joint Forces Air Component Commander (JFACC) from the Air Operations Center (AOC) down to the wing and unit levels; aerospace defense planning and execution; airspace deconfliction; targeting and weaponeering; and many other applications supporting air operations command and control. TBMCS integrated functionality of the following legacy systems: Contingency Theater Automated Planning System (CTAPS), Wing Command & Control System (WCCS), and Combat Intelligence System (CIS). During FY 02, the USAF initiated the consolidation of TBMCS, AOC, and GCCS-AF infrastructure planning into an ACAT-IA Major Automated Information System (MAIS) program to enable the joint synchronization of service command and control systems.

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

- (U) \$0 Accomplishments/Planned Programs
- (U) \$6,014 Complete TBMCS software Increment 1.1 baseline development (Including Force Level, Unit Ops & Unit Intel Spirals).
- (U) \$14,751 Continue TBMCS software Increment 1.1 baseline Spirals (formerly i1.2 - includes Force Level, Unit Ops & Intel Spirals)
- (U) \$900 Initiate Advanced planning (formerly TBMCS Block 2)
- (U) \$2,100 System engineering and interoperability with US, NATO or other coalition systems
- (U) \$23,765 Total

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

- (U) \$0 Accomplishments/Planned Programs
- (U) \$18,440 Complete TBMCS Increment 1.1 baseline Spirals (including Force Level, Unit Ops & Unit Intel Spirals, effort continues into FY04 )
- (U) \$1,000 Begin TBMCS Increment 2.0 planning and development (formerly Block 2 development)
- (U) \$1,918 System engineering and interoperability with US, NATO, or other coalition systems

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0207438F Theater Battle Management (TBM) C4I</b>					<b>4790</b>	
<b>(U) A. Mission Description Continued</b>										
<b>(U) FY 2003 (\$ in Thousands) Continued</b>										
<b>(U) \$21,358 Total</b>										
<b>(U) FY 2004 (\$ in Thousands)</b>										
<b>(U) \$0 Accomplishments/Planned Programs</b>										
<b>(U) \$7,018 TBMCS complete software Increment 1.1 baseline spirals (including Force Level, Unit Ops, &amp; Unit Intel Spirals)</b>										
<b>(U) \$6,037 TBMCS continue Increment 2.0 Development (including Force Level, Unit Ops, &amp; Unit Intel Spirals)</b>										
<b>(U) \$2,200 TBMCS System Engineering and interoperability with US, NATO, or other coalition systems.</b>										
<b>(U) \$4,500 FIOP Requirements and Engineering Management.</b>										
<b>(U) \$700 FIOP Execution Management Capability.</b>										
<b>(U) \$500 FIOP Tactical Workstation COE Development.</b>										
<b>(U) \$500 FIOP COE Support for Joint Variable Message format.</b>										
<b>(U) \$21,455 Total</b>										
<b>(U) B. Project Change Summary</b>										
Funding for FIOP began in FY02 and was contained in PE 0604754F, Tactical Data Link Integration. FIOP funding was transferred to PE 0207438F for FY04-FY09.										
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Other Procurement, AF, PE 0207438F, WSC 834520	42,927	54,358	50,697	54,043	51,602	41,249	46,339	47,476	Continuing	TBD
(U) Other Procurement, AF, PE 0207431F, WSC 834520	2,795	1,302	0	0	0	0	0	0	0	4,097

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207438F Theater Battle Management (TBM) C4I</b>	PROJECT <b>4790</b>
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**(U) D. Acquisition Strategy**

TBMCS - Electronic Systems Center (ESC), Hanscom AFB, MA manages the TBMCS program. Lockheed-Martin Mission Systems (LMMS) was competitively selected after full and open competition. They were awarded a cost plus award fee contract to develop improved capabilities in support of effective Theater Battle Management and to integrate existing and evolutionary capabilities in the DII Common Operating Environment. The program uses an evolutionary acquisition strategy with a series of incremental, spiral development software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability to advances in commercial technology to fulfill evolving aerospace command and control requirements.

FIOP - Implement Spiral development, integration and sustain web-enable COP capabilities that are interoperable with existing Service systems by identifying execution-level requirements and candidate solutions which will be tested and then be migrated to the fielded Service systems for sustainment.

**(U) E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) TBMCS software Increment 1.1 Baseline												
(U) Multi-Service Operational T&E		*										
(U) 1.1 Baseline Release		*										
(U) TBMCS software Inc 1.1 Baseline Spirals												
(U) Force Level Spirals					*		X					X
(U) Unit Level Ops Spirals				*			X		X			
(U) Unit Level Intel Spirals		*		*			X			X		
(U) FIOP												
(U) Rqmts/Engr Management									X			
(U) Execution Management Capability												
(U) Tactical COE Workstation Development												
(U) COE Spt for Joint VMF									X			

Note 1: \* Denotes Completed Event; X Denotes Planned Event

Note 2: i1.1 and 1.2 activities reflect multiple spiral releases leading up to increment completion.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2003					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
<b>07 - Operational System Development</b>				<b>0207438F Theater Battle Management (TBM) C4I</b>				<b>4790</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	TBMCS System Integration and Development					21,665		19,440		13,055	
(U)	TBMCS System Engineering and Support					2,100		1,918		2,200	
(U)	FIOP Rqmts/Engr Management									4,500	
(U)	FIOP Execution Management Capability									700	
(U)	FIOP Tactical COE Workstation Development									500	
(U)	FIOP COE Spt for Joint Variable Message Format									500	
(U)	Total					23,765		21,358		21,455	
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>							
<u>Product Development Organizations</u>											
TBMCS-LMMS	CPAF	Oct 95	TBD	TBD		13,970	16,899	11,383	Continuing	TBD	
TBMCS Accenture	DO	Sep 01	TBD	TBD		3,422	0			3,422	
TBMCS Rome Lab	MIPR	Jun 01	TBD	TBD		1,000	1,000	1,000	Continuing	TBD	
TBMCS SAIC	MIPR	Feb 01	TBD	TBD		1,198				1,198	
TBMCS General Dynamics	MIPR	Feb 02	TBD	TBD		265	400	200		865	
TBMCS GSA	MIPR	Sep 01	TBD	TBD		810	630	600		2,040	
TBMCS INEEL	MIPR	Feb 02	TBD	TBD		1,000	450			1,450	
FIOP - Multi Service	MIPR	TBD						5,400	Continuing	TBD	
Contracts											
<u>Support and Management Organizations</u>											
TBMCS - MITRE	CPAF	Oct 94	N/A	N/A		1,970	1,849	1,942	Continuing	TBD	
FIOP - MITRE	CPAF	Oct 04									
FIOP - Contractor Spt	PR/MIPR	Various						800	Continuing	TBD	
Project 4790											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>					<b>0207438F Theater Battle Management (TBM) C4I</b>				<b>4790</b>	
<b>(U) Performing Organizations Continued:</b>										
<u>Test and Evaluation Organizations</u>										
46TS	Project Order	Various	N/A	N/A	130	130	130	Continuing	TBD	
<b>(U) Government Furnished Property:</b>										
	<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>									
<u>Product Development Property</u>										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						21,665	19,379	18,583	TBD	TBD
Subtotal Support and Management						1,970	1,849	2,742	TBD	TBD
Subtotal Test and Evaluation						130	130	130	TBD	TBD
Total Project						23,765	21,358	21,455	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207438F Theater Battle Management (TBM) C4I					PROJECT 4802	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4802	Deliberate and Crisis Action Planning and Execution Segment (DCAPES)	12,087	10,216	10,192	10,400	10,612	10,799	11,094	11,269	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>            Deliberate and Crisis Action Planning and Execution Segments (DCAPES) is being developed as the next generation AF interface to the Joint Operational Planning and Execution System (JOPES). This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the Joint vision for integrated C2. DCAPES is intended to be more tightly coupled with the range of planning support systems to provide a more effective crisis action planning capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) Commander. DCAPES provides a real time, two way interchange of manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people and airframes/weapon systems to the Combatant Commander's warfighting requirements.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Programs            (U) \$9,660 DCAPES Increment 2 contractor development, requirements definition, prototyping, coding, and testing. Consists of Logistics Feasibility Analysis Capability (LOGFAC), Logistics Module (LOGMOD)/Manpower/Personnel Base Level (MANPER B), War Mobilization Plan (WMP), Expeditionary Combat Support System (ECSS), Web Enablement, and JOPES Modernization Migration            (U) \$468 Government deployment operational testing and interoperability support            (U) \$1,959 DCAPES Increment 2 Program Management/Engineering Support            (U) \$12,087 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Programs            (U) \$7,163 Continue DCAPES Increment 2 contractor development, requirements definition, prototyping, coding, and testing. Consists of LOGFAC, LOGMOD/MANPER B, WMP, ECSS, Web Enablement, and JOPES Modernization Migration            (U) \$331 Initiate DCAPES Increment 3 requirements definition            (U) \$1,909 Continue DCAPES Increment 2 Program Management/Engineering Support            (U) \$813 Continue Government deployment operational testing and interoperability support            (U) \$10,216 Total</p>											
Project 4802		Page 11 of 14 Pages					Exhibit R-2A (PE 0207438F)				



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207438F Theater Battle Management (TBM) C4I</b>				<b>4802</b>		
<b>(U) <u>A. Mission Description Continued</u></b>										
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>										
<b>(U) \$0 Accomplishments/Planned Programs</b>										
<b>(U) \$7,009 Continue DCAPEs Increment 2 contractor development.</b>										
<b>(U) \$331 Continue Increment 3 Requirements Definition</b>										
<b>(U) \$1,998 Continue DCAPEs Increment 2 Program Management/Engineering Support</b>										
<b>(U) \$854 Continue Government deployment operational testing and interoperability support</b>										
<b>(U) \$10,192 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 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<b>(U) Other APPN</b>										
N/A										
<b>(U) <u>D. Acquisition Strategy</u></b>										
DCAPES will be managed by Electronic Systems Center, Hanscom AFB, MA. In July 98, the DCAPES contract was awarded to the Raytheon, Computer Sciences Corporation, and Science Applications International Corporation team under Command and Control Product Line (CCPL) contracts awarded and maintained by Electronic Systems Center. Computer Sciences Corporation and Science Applications International Corporation were awarded the follow-on support contract on 15 Feb 02. The program uses an evolutionary acquisition strategy with incremental spiral development with one or multiple software releases. This approach accommodates refinement and prioritization of user requirements and improves adaptability with commercial technology.										
<b>(U) <u>E. Schedule Profile</u></b>										
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>	
			1	2	3	4	1	2	3	4
<b>(U) Government Acceptance Testing (Incr I)</b>				*						
<b>(U) DCAPEs Initial Increment I fielded</b>				*						
<b>(U) Increment 2, Spiral 1 Requirements Analysis (Note 2)</b>							*			
<b>(U) Increment 2, Spiral 1 Fielding (Note 3)</b>										X
<b>(U) LOGFAC Pilot Requirements Analysis (Note 4)</b>							*			
<b>Project 4802</b>										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003								
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT								
<b>07 - Operational System Development</b>					<b>0207438F Theater Battle Management (TBM) C4I</b>					<b>4802</b>								
<b>(U) <u>E. Schedule Profile Continued</u></b>																		
					<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>							
					1	2	3	4	1	2	3	4	1	2	3	4		
(U) Deliver LOGFAC Pilot to Government										X								
(U) Test and Field LOGFAC Pilot													X					
(U) DCAPES-LOGFAC Requirements Analysis (Note 5)													X					
(U) Test and Field DCAPES-LOGFAC															X	X		
(U) Increment 2, Spiral 2 Requirements Analysis (Note 6)															X			
<p>Note 1: * Denotes Completed Event; X Denotes Planned Event</p> <p>Note 2: Increment 2 contains 3 Spirals. Requirements analysis slipped due to required Incr I performance enhancements taking precedence over future Incr analysis.</p> <p>Note 3: After completing Incr I performance issues and the delay of GCCS 4.X released from June 02 to Mar 04 resulted in Incr 2, spiral being reprioritized and a new development approach for LOGFAC.</p> <p>Note 4: LOGFAC is the primary capability in Incr 2, spiral I; Pilot implementation is a limited capability only - full version is contingent on DISA release of GCCS 4.X in March 04.</p> <p>Note 5: DCAPES - LOGFAC is the full version of the pilot implementation.</p> <p>Note 6: Remaining prioritized requirements for Increment 2, Spiral 2 following LOGFAC fielding.</p>																		
Project 4802					Page 13 of 14 Pages					Exhibit R-2A (PE 0207438F)								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207438F Theater Battle Management (TBM) C4I</b>			<b>4802</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Development Contract Effort					9,660		7,494		7,340
(U)	Test Support					468		813		854
(U)	Program Management Support					1,959		1,909		1,998
(U)	Total					12,087		10,216		10,192
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Raytheon/ CSC/ SAIC	FP/LH with award fee	Feb 98	N/A	N/A	16,121	2,350	0	0	Continuing	TBD
SSG/SW	T&M	Apr 01	N/A	N/A	450	1,662	1,000	500	Continuing	TBD
CSC/SAIC	CPFF	Feb 02	N/A	N/A	0	5,648	6,494	6,840	Continuing	TBD
<u>Support and Management Organizations</u>										
FFRDC	CPAF					857	622	653	Continuing	TBD
ITSP	T&M					901	932	978	Continuing	TBD
Other	Various					201	355	367	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46 Test Sqdn/JITC	Project Order						468	813	854	Continuing
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					16,571	9,660	7,494	7,340	TBD	TBD
Subtotal Support and Management						1,959	1,909	1,998	TBD	TBD
Subtotal Test and Evaluation						468	813	854	TBD	TBD
Total Project					16,571	12,087	10,216	10,192	TBD	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207445F FIGHTER TACTICAL DATA LINK</b>					<b>PROJECT</b> <b>5043</b>	
<b>COST (\$ in Thousands)</b>	<b>FY 2002 Actual</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>FY 2008 Estimate</b>	<b>FY 2009 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
5043 Fighter Tactical Data Link	0	38,168	42,877	67,617	41,419	42,032	39,763	48,149	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

On 17 April, 2001 the Chief of Staff of the Air Force (CSAF) approved the management of the Tactical Data Links (TDL) as a Major System Acquisition Program. In order to effectively manage the program, the Tactical Data Links System Program Office (SPO) was stood up at Electronic Systems Center (ESC), Hanscom AFB, MA on 29 May, 2001. Funding from platform PEs was transferred to the appropriate TDL platform PE. Four new program elements were created in FY03 to consolidate the platform integration funding. This includes PE 0207445F, Fighter Tactical Data Link; PE 0207446F, Bomber Tactical Data Link; PE 0207448F, Command, Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) Tactical Data Link; and PE 0401839F, Airlift/Other Tactical Data Link.

**(U) A. Mission Description**

Tactical Data Links (TDL) are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by the Air Force, Army, Navy, and Marine Corps theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), and Variable Message Format (VMF).

This effort adds tactical data link capability to the A/OA-10 aircraft. The A/OA-10 upgrade is required to enhance its ability to support Close Air Support (CAS) and interdiction mission requirements. This effort also adds Link 16 transmit capability to the F/A-22 to support air-to-air and air-to-ground mission requirements and keeps the F-117 current and compatible with the USAF Global Strike Task Force (GSTF) concept through 2020+. Link 16 provides a jam-resistant, secure digital data transfer network capability with a standardized waveform and data format allowing intra and inter-flight communications. Link 16 will increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on and off-board sensor data sharing target and threat information. Link 16 efforts include incorporating MIL-STD-6016 additions and changes, and applicable Interface Change Proposals (ICPs), and interoperability certification testing with the Joint Interoperability Test Center (JITC).

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

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

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207445F FIGHTER TACTICAL DATA LINK</b>	PROJECT <b>5043</b>
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(U) **A. Mission Description Continued**

(U) FY 2003 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Programs
(U) \$29	Perform A-10 Tactical Data Link studies
(U) \$35,139	Integrate F/A-22 Link 16 transmit capability
(U) \$3,000	Support F/A-22 Link 16 test activities.
(U) \$38,168	Total

(U) FY 2004 (\$ in Thousands)

(U) \$0	Accomplishments/Planned Programs
(U) \$72	Perform A-10 Tactical Data Link studies
(U) \$39,805	Integrate F/A-22 Link 16 transmit capability
(U) \$3,000	Continue F/A-22 Link 16 testing activities support
(U) \$42,877	Total

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

Fighter Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget		39,034	38,937	TBD
(U) Appropriated Value		39,034		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-481		
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-385		
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR			3,940	
(U) Current Budget Submit/FY 2004 PBR		38,168	42,877	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207445F FIGHTER TACTICAL DATA LINK</b>				PROJECT <b>5043</b>		
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>										
<b>(U) Significant Program Changes:</b>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
(U) AF RDT&E										
(U) 27434 (Link 16 Sup & Sus)	0	50,073	58,783	190,001	257,665	247,322	177,451	177,624		
(U) 27446 (Bomber TDL)	0	0	12,959	120,571	166,535	89,009	0	0		
(U) 27448 (C2ISR TDL)	0	0	26,927	26,713	7,254	745	0	0		
(U) 41839 (Airlift TDL)	0	0	0	67,199	85,030	150,094	42,808	42,457		
(U) 64754 (TDL Integration)	18,138	0	14,675	24,720	26,833	27,079	39,950	28,544		
(U) Other APPN										
(U) Procurement (3010)										
(U) 27434 (Link 16 Sup & Sus)	0	36,013	40	0	0	0	0	0		
(U) 27445 (Fighter TDL)	0	0	31,635	98,076	122,338	94,153	44,195	32,518		
(U) 27446 (Bomber TDL)	0	0	0	86,125	48,254	33,185	30,570	28,149		
(U) 27448 (C2ISR TDL)	0	0	0	16,503	5,769	1,091	6,025	6,128		
(U) 41839 (Airlift TDL)	0	0	0	11,827	24,043	0	0	0		
(U) O&M (3400)										
(U) 27434 (Link 16 Sup & Sus)	10,143	11,494	13,482	16,535	21,401	23,521	24,696	22,753		
(U) Other Procurement (3080)										
(U) 27434 (Link 16 Sup & Sus)	0	0	0	1,744	9,602	21,202	2,785	2,829		
<b>(U) E. Acquisition Strategy</b>										
The Air Force Tactical Data Links System Program Office (SPO) provides for common development of integration and interoperability across all Air Force platforms and ensures that link 16 is procured and maintained as a joint, end-to-end, command and control system.										
<b>(U) F. Schedule Profile</b>										
				<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0207445F FIGHTER TACTICAL DATA LINK</b>					<b>5043</b>				
<b>(U) F. Schedule Profile Continued</b>														
		<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U)	A-10 Tactical Data Link Studies							X				X		
(U)	F-22 Link 16 Transmit Integration						X	X	X		X	X	X	
(U)	F-22 Link 16 test support						X	X	X		X	X	X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207445F FIGHTER TACTICAL DATA LINK			PROJECT 5043		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	A-10 Tactical Data Link						29			72
(U)	Requirements definition to incorporate Link 16 F/A-22 transmit capability						35,139			39,805
(U)	Proposal preparation to support development and test activities						3,000			3,000
(U)	Total						38,168			42,877
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Lockheed Martin Systems	CPAF	1QFY02					29	72	Continuing	TBD
Integration (A-10 Digital Data Link)*										
F/A-22 Link 16 Transmit**	TBD	2QFY03				35,389	39,795		Continuing	TBD
Contractor Support	FFP	1QFY03				1,100	1,200		Continuing	TBD
MITRE	FFP	1QFY03				1,300	1,400		Continuing	TBD
*Funding to A-10 SPO via AF Form 616. **Funding to F/A-22 SPO via AF Form 616.										
<u>Support and Management Organizations</u>										
Program Office	various	various				350	410		Continuing	TBD
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development							37,818	42,467	TBD	TBD
Subtotal Support and Management							350	410	TBD	TBD
Subtotal Test and Evaluation										
Total Project							38,168	42,877	TBD	TBD



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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207446F Bomber Tactical Data Link</b>						<b>PROJECT</b> <b>5041</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5041	Bomber Tactical Data Link	0	0	12,959	120,571	166,535	89,009	0	0	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

On 17 April, 2001 the Chief of Staff of the Air Force (CSAF) approved the management of the Tactical Data Links (TDL) as a Major System Acquisition Program. In order to effectively manage the program, the Tactical Data Links System Program Office (SPO) was stood up at Electronic Systems Center (ESC), Hanscom AFB, MA on 29 May, 2001. Funding from platform PEs was transferred to the appropriate TDL platform PE. Four new program elements were created in FY03 to consolidate the platform integration funding. This includes PE 0207445F, Fighter Tactical Data Link; PE 0207446F, Bomber Tactical Data Link; PE 0207448F, Command, Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) Tactical Data Link; and PE 0401839F, Airlift/Other Tactical Data Link.

**(U) A. Mission Description**

Tactical Data Links (TDL) are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by the Air Force, Army, Navy, and Marine Corps theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include but are not limited to: Link-16, Link-11, Situational Awareness Data Link (SADL), and Variable Message Format (VMF).

This effort adds Link 16 line-of-sight (LOS) and beyond line-of-sight (BLOS) datalink capabilities to the B1-B, B-2, and B-52s. Link 16 provides a jam-resistant, secure digital data transfer network capability with a standardized waveform and data format allowing LOS intra and inter-flight communications. Link 16 will increase mission effectiveness, provide situational awareness, provide positive identification of aircraft in the network, correlate on and off-board sensor data sharing target and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. The BLOS datalink capability works with Link 16 to extend the range beyond the LOS Link 16 network. Link 16 efforts include incorporating MIL-STD-6016 additions and changes, and applicable Interface Change Proposals (ICPs), and interoperability certification testing with the Joint Interoperability Test Center (JITC).

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

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

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207446F Bomber Tactical Data Link</b>		<b>5041</b>	
<b>(U) <u>A. Mission Description Continued</u></b>					
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$2,500	Contract for LOS Link 16 terminals and BLOS radios for B-1 development labs and aircraft.			
(U)	\$2,000	Complete proposal preparation for contract award.			
(U)	\$8,459	Integrate of B-1 LOS and BLOS datalink capability			
(U)	\$12,959	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>					
Bomber Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget	0	0	13,198	TBD
(U)	Appropriated Value				
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2003 PBR			-239	
(U)	Current Budget Submit/FY 2004 PBR			12,959	TBD
<b>(U) <u>Significant Program Changes:</u></b>					
Not Applicable					
Project 5041		Page 2 of 5 Pages	Exhibit R-2 (PE 0207446F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003							
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207446F Bomber Tactical Data Link</b>				PROJECT <b>5041</b>							
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>																
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>						
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E																
(U) 27434 (Link 16 Sup & Sus)	0	50,073	58,783	190,001	257,665	247,322	177,451	177,624								
(U) 27445 (Fighter TDL)	0	38,168	42,877	67,617	41,419	42,032	39,763	48,149								
(U) 27448 (C2ISR TDL)	0	0	26,927	26,713	7,254	745	0	0								
(U) 41839 (Airlift TDL)	0	0	0	67,199	85,030	150,094	42,808	42,457								
(U) 64754 (TDL Integration)	18,138	0	14,675	24,720	26,833	27,079	39,950	28,544								
(U) Other APPN																
(U) Procurement (3010)																
(U) 27434 (Link 16 Sup & Sus)	0	36,013	40	0	0	0	0	0								
(U) 27445 (Fighter TDL)	0	0	31,635	98,076	122,338	94,153	44,195	32,518								
(U) 27446 (Bomber TDL)	0	0	0	86,125	48,254	33,185	30,570	28,149								
(U) 27448 (C2ISR TDL)	0	0	0	16,503	5,769	1,091	6,025	6,128								
(U) 41839 (Airlift TDL)	0	0	0	11,827	24,043	0	0	0								
(U) O&M (3400)																
(U) 27434 (Link 16 Sup & Sus)	10,143	11,494	13,482	16,535	21,401	23,521	24,696	22,753								
(U) Other Procurement (3080)																
(U) 27434 (Link 16 Sup & Sus)	0	0	0	1,744	9,602	21,202	2,785	2,829								
<b>(U) E. Acquisition Strategy</b>																
The Air Force Tactical Data Links System Program Office (SPO) provides for common development of integration and interoperability across all Air Force platforms and ensures that link 16 is procured and maintained as a joint, end-to-end, command and control system.																
<b>(U) F. Schedule Profile</b>																
				<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				
				1	2	3	4	1	2	3	4	1	2	3	4	
(U) Link 16 Terminals																X
(U) Proposal Prep for Contract Award																X
(U) Begin Integration of B-1 Datalink Capability																X

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207446F Bomber Tactical Data Link			PROJECT 5041			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>	
(U)	Contract for LOS Link 16 terminals and BLOS radios for B-1 development labs and aircraft									2,500	
(U)	Complete proposal preparation for contract award									2,000	
(U)	Integrate B-1 LOS and BLOS datalink capability									8,459	
(U)	Total									12,959	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Rockwell/Lockheed	FFP	1QFY04					2,500	Continuing	TBD	
	Martin/Viasat*										
	B-1 Link 16 Development Contractor**	TBD	3QFY04					9,649	Continuing	TBD	
	Contractor Support	FFP	1QFY04					500	Continuing	TBD	
	MITRE	FFP	1QFY04					200	Continuing	TBD	
	*MIPR funding to SPAWAR to purchase terminals. **MIPR funding to B-1 SPO for development/integration efforts.										
	<u>Support and Management Organizations</u>										
	Program Office							110	Continuing	TBD	
	<u>Test and Evaluation Organizations</u>										
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>	
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										

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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>0207446F Bomber Tactical Data Link</b>			<b>February 2003</b> <b>5041</b>	
<b>(U) Government Furnished Property Continued:</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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					
	Subtotal Product Development				12,849	TBD
	Subtotal Support and Management				110	TBD
	Subtotal Test and Evaluation					
	Total Project				12,959	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207448F C2ISR Tactical Data Link</b>						<b>PROJECT</b> <b>5045</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5045	C2ISR Tactical Data Link	0	0	26,927	26,713	7,254	745	0	0	0	62,745
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

On 17 April, 2001 the Chief of Staff of the Air Force (CSAF) approved the management of the Tactical Data Links (TDL) as a Major System Acquisition Program. In order to effectively manage the program, the Tactical Data Links System Program Office (SPO) was stood up at Electronic Systems Center (ESC), Hanscom AFB, MA on 29 May, 2001. Funding from platform PEs was transferred to the appropriate TDL platform PE. Four new program elements were created in FY03 to consolidate the platform integration funding. This includes PE 0207445F, Fighter Tactical Data Link; PE 0207446F, Bomber Tactical Data Link; PE 0207448F, Command, Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) Tactical Data Link; and PE 0401839F, Airlift/Other Tactical Data Link.

**(U) A. Mission Description**

Tactical Data Links (TDL) are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by the Air Force, Army, Navy, and Marine Corps theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include but are not limited to: Link-16, Link-11, Situational Awareness Data link (SADL), Variable Message Format (VMF).

This effort adds Link 16 capability to ground and air C2 platforms including, but not limited to, Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), Multi Sensor Command & Control Aircraft (MC2A) and Iceland Air Defense System (IADS). In particular, this effort funds AWACS 40/45 Data Link Infrastructure (DLI) integration, JSTARS Attack Support Upgrade (ASU) and MC2A TDL. AWACS DLI improves AWACS contribution to Time Critical Targeting via DLI. JSTARS ASU provides sensor-to-shooter connectivity with Link-16 equipped fighters/bombers on attack support, theater missile defense missions, and global attack, and helicopter detection and reporting. MC2A TDL provides support for Multi-Sensor Command and Control Aircraft TDL development and testing activities.

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

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



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
<b>07 - Operational System Development</b>		<b>0207448F C2ISR Tactical Data Link</b>		<b>5045</b>	
<b>(U) A. Mission Description Continued</b>					
<b>(U) FY 2003 (\$ in Thousands)</b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$0	No Activity			
(U)	\$0	Total			
<b>(U) FY 2004 (\$ in Thousands)</b>					
(U)	\$0	Accomplishments/Planned Program			
(U)	\$1,251	AWACS Blocks 40/45 Upgrades .			
(U)	\$22,274	Support system integration for JSTARS Link 16 Attack Support Upgrades (ASU) capability.			
(U)	\$3,402	Support C2ISR Integration			
(U)	\$26,927	Total			
<b>(U) B. Budget Activity Justification</b>					
C2ISR Tactical Data Link program is in Budget Activity 7, Operational System Development, since it supports integration of tactical data links into operational systems.					
<b>(U) C. Program Change Summary (\$ in Thousands)</b>					
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U)	Previous President's Budget			27,422	62,745
(U)	Appropriated Value				
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions				
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2003 PBR			-495	
(U)	Current Budget Submit/FY 2004 PBR			26,927	62,745
(U)	<u>Significant Program Changes:</u>				

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207448F C2ISR Tactical Data Link</b>	<b>PROJECT</b> <b>5045</b>
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**(U) D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) 27434 (Link 16 Sup & Sus)	0	50,073	58,783	190,001	257,665	247,322	177,451	177,624		
(U) 27445 (Fighter TDL)	0	38,168	42,877	67,617	41,419	42,032	39,763	48,149		
(U) 27446 (Bomber TDL)	0	0	12,959	120,571	166,535	89,009	0	0		
(U) 41839 (Airlift TDL)	0	0	0	67,199	85,030	150,094	42,808	42,457		
(U) 64754 (TDL Integration)	18,138	0	14,675	24,720	26,833	27,079	39,950	28,544		
(U) Other APPN										
(U) Aircraft Procurement, AF (3010)										
(U) 27434 (Link 16 Sup & Sus)	0	36,013	40	0	0	0	0	0		
(U) 27445 (Fighter TDL)	0	0	31,635	98,076	122,338	94,153	44,195	32,518		
(U) 27446 (Bomber TDL)	0	0	0	86,125	48,254	33,185	30,570	28,149		
(U) 27448 (C2ISR TDL)	0	0	0	16,503	5,769	1,091	6,025	6,128		
(U) 41839 (Airlift TDL)	0	0	0	11,827	24,043	0	0	0		
(U) O&M (3400)										
(U) 27434 (Link 16 Sup & Sus)	10,143	11,494	13,482	16,535	21,401	23,521	24,696	22,753		
(U) Other Procurement, AF (3080)										
(U) 27434 (Link 16 Sup & Sus)	0	0	0	1,744	9,602	21,202	2,785	2,829		

**(U) E. Acquisition Strategy**

The Air Force Tactical Data Links System Program Office (SPO) provides for common development of integration and interoperability across all Air Force platforms and ensures that link 16 is procured and maintained as a joint, end-to-end, command and control system.

**(U) F. Schedule Profile**

FY 2002

FY 2003

FY 2004

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2003						
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT						
<b>07 - Operational System Development</b>					<b>0207448F C2ISR Tactical Data Link</b>					<b>5045</b>						
<b>(U) F. Schedule Profile Continued</b>																
					<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
					1	2	3	4	1	2	3	4	1	2	3	4
(U) AWACS Block 40/45 Upgrade														X	X	X
(U) JSTARS ASU System Integration													X	X	X	X
(U) C2ISR Integration														X	X	X
(U)																
Project 5045					Page 4 of 6 Pages					Exhibit R-2 (PE 0207448F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207448F C2ISR Tactical Data Link			PROJECT 5045			
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>											
					FY 2002		FY 2003			FY 2004	
(U)	AWACS Blocks 40/45 Upgrades									1,251	
(U)	System integration for JSTARS Link 16 ASU capability.									22,274	
(U)	C2ISR Integration									3,402	
(U)	Total									26,927	
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>											
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Northrop Grumman	CPAF	Feb 03			0	0	0	22,020	31,493	53,513
	Boeing	FPIF/CPAF	Feb 04			0	0	0	1,150	4,325	5,475
	C2ISR Integration	Various	Various			0	0	0	3,233	0	3,233
	MITRE								254		254
	<u>Support and Management Organizations</u>										
	Program Office	Various	Various						270		270
	<u>Test and Evaluation Organizations</u>										
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2003	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0207448F C2ISR Tactical Data Link</b>			<b>5045</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development	0	0	0	26,657	35,818	62,475
Subtotal Support and Management				270		270
Subtotal Test and Evaluation						
Total Project	0	0	0	26,927	35,818	62,745

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

DATE  
**February 2003**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0207449F Multi-sensor Command and Control Constellation (MC2C)**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	333,864	363,630	550,860	542,458	343,969	155,536	21,315	Continuing	TBD
5064 Airframe	0	125,495	208,305	360,432	372,211	256,545	113,841	21,315	Continuing	TBD
5065 Sensors	0	208,369	155,325	190,428	170,247	87,424	41,695	0	Continuing	TBD
5078 Horizontal Integration	0	0	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

1. In FY 2003, the Air Force established a program element called the Multi-sensor Command and Control Constellation (MC2C) to support the development of the constellation's key node -- the Multi-sensor Command and Control Aircraft (MC2A). The MC2 Constellation will be a horizontally integrated architecture of Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to support global and theater persistent battlespace awareness. Its central element is the MC2 Aircraft (MC2A) which is a key enabler of the national military anti-access strategy, the AEF Task Force concept, and the joint cruise missile defense (CMD) architecture. The MC2C PE absorbed, and continued, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) previously reported in PE 0207581F Joint STARS, Project Number 674995. Additionally, it supports the transition of hosting the MP-RTIP sensor on a 767-400ER platform vice a 707 airframe with funding transferred from PE 0207581F Joint STARS, Project Number 670003. With the current funding profile, delivery of the required four MC2A spiral 1 aircraft is planned for CY13, one year late to Defense Planning Guidance direction. To clarify the programmatic confusion between the MC2 Aircraft (MC2A) and the MC2 Constellation, the Air Force is in the midst of revising its budgeting structure to clearly delineate separate PEs for these two efforts as follows: (1) this PE will be retitled as MC2A and (2) a new PE, titled 'Horizontal Integration', will be added. The realigned Air Force PE structure is expected to be in place no later than the FY05 APOM.

2. FYDP RDT&E Article Deliveries:

FY 2005: 1 767-400ER Testbed

FY 2007: 1 Global Hawk MP-RTIP radar for integration

FY 2008: 1 MC2A MP-RTIP radar for testbed/flight test  
1 MC2A MP-RTIP radar for SIL/integration

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

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207449F Multi-sensor Command and Control Constellation (MC2C)**

1 MC2A MP-RTIP radar for concurrent mode development

3. FY03 DERF funding is reflected in the MC2C program line. MC2C received \$147M FY03 DERF funding which was included in the program as follows: \$85.3M to MC2A airframe (BPAC 675064); \$61.7M for the acceleration of MP-RTIP sensor development in (BPAC 675065); and \$20.5M for MC2 Constellation horizontal integration efforts (accounted for in the Airframe/BPAC 675064). The DERF funding was used to initiate the incrementally funded purchase of a RDT&E 767-400ER aircraft, begin system engineering design efforts for the aircraft modifications, accelerate MP-RTIP sensor development and initiate the MC2 Constellation's horizontal integration architecture development.

**(U) A. Mission Description**

The Multi-sensor Command and Control Constellation (MC2C) will be a horizontally integrated architecture of Command and Control (C2), Intelligence, Surveillance, and Reconnaissance (ISR) capabilities. The MC2C will be Task Forces' critical enabling function to achieve persistent battlespace awareness. This vision integrates current, developmental, and future manned/unmanned space, air and ground sensors, data links, ground stations, exploitation tools, communication/information dissemination systems and C2/ battle management elements to give the warfighter real-time, decision quality information to prosecute the full range of military operations. MC2C will achieve horizontal integration through the development of a network centric architecture, use of rapidly maturing modeling and simulation techniques, and application of rapid reaction, high leverage technology initiatives.

A key element of MC2 Constellation is the Multi-sensor Command and Control Aircraft (MC2A) -- the 'hub' of the constellation's architecture. The MC2 Aircraft will be the next generation, manned wide area surveillance platform designed to provide a near real-time, horizontally integrated view of the air and space battlespace through the use of advanced sensors, network-centric warfare and high-speed, wide band communications systems. A constellation of high/ medium altitude endurance Unmanned Air Vehicles (UAVs) and space sensors will augment the MC2A's sensor capabilities to provide precise target location/identification data. This robust network of sensor information enables seamless re-tasking of theater and global sensors from collection to targeting.

As the heart of the constellation, the MC2A will employ sensors, communications, data links, and battle management integration software to execute the full range of military operations. MC2A will interface with multi-service ground/air/space-based sensors, intelligence and communications assets to shorten the decision cycle for combat operations. MC2A enables the detection, designation, and prosecution of time critical targets by providing battlespace situational awareness.

MC2A's capability will be developed in evolutionary spirals. MC2A Spiral 1, based on the Multi-Platform Radar Technology Insertion Program (MP-RTIP) capabilities, delivers an advanced, next generation Ground Moving Target Indicator (GMTI) wide area surveillance capability, focused Air Moving Target Indicator (AMTI) for Cruise Missile Defense (CMD), open system architecture facilitating a dynamic Battle Management, Command and Control (BMC2) and growth potential for Unmanned Aerial Vehicle (UAV) control, space-based radar interface and Intelligence, Surveillance and Reconnaissance (ISR) management functions integrated

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

DATE  
**February 2003**

BUDGET ACTIVITY  
**07 - Operational System Development**

PE NUMBER AND TITLE  
**0207449F Multi-sensor Command and Control Constellation (MC2C)**

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

onto a 767-400ER airframe. MC2A future spirals are envisioned to incorporate advanced sensors for air surveillance operations, sensor fusion, battle management functions, UAV control, space-based radar integration and laser communications.

The MP-RTIP program will also provide a robust Global Hawk reconnaissance capability. The MP-RTIP program plan no longer includes the fabrication of a radar for NATO AGS (formerly known as the NATAR radar) due to a lack of a NATO AGS platform selection decision, but continues to support the NATO AGS radar definition effort and early decision analysis activities to support OSD's strategy for the United States' involvement in the NATO AGS program.

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

These funds are required to meet the requirements, capabilities and efforts further defined in the 'Mission Description' section of the following R-2s.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	0	191,089	402,258	TBD
(U) Appropriated Value		191,089		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-4,225		
d. Below Threshold Reprogram				
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2003 PBR		147,000	-38,628	TBD
(U) Current Budget Submit/FY 2004 PBR		333,864	363,630	TBD

(U) **Significant Program Changes:**

The FY03 PBR to FY04 PBR funding increases reflect the MC2A Spiral 1 costs associated with transitioning the MP-RTIP radar from a 707 platform to a 767-400ER platform. Funding for fabrication of the NATAR radar for NATO AGS has been removed from the program.



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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>					PROJECT <b>5064</b>	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost	
5064    Airframe	0	125,495	208,305	360,432	372,211	256,545	113,841	21,315	Continuing	TBD	
<p>1. In FY 2003, the Air Force established a program element called the Multi-sensor Command and Control Constellation (MC2C) to support the development of the constellation's key node -- the Multi-sensor Command and Control Aircraft (MC2A). The MC2 Constellation will be a horizontally integrated architecture of Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to support global and theater persistent battlespace awareness. Its central element is the MC2 Aircraft (MC2A) which is a key enabler of the national military anti-access strategy, the AEF Task Force concept, and the joint cruise missile defense (CMD) architecture. The MC2C PE absorbed, and continued, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) previously reported in PE 0207581F Joint STARS, Project Number 674995. Additionally, it supports the transition of hosting the MP-RTIP sensor on a 767-400ER platform vice a 707 airframe with funding transferred from PE 0207581F Joint STARS, Project Number 670003. With the current funding profile, delivery of the required four MC2A spiral 1 aircraft is planned for CY13, one year late to Defense Planning Guidance direction. To clarify the programmatic confusion between the MC2 Aircraft (MC2A) and the MC2 Constellation, the Air Force is in the midst of revising its budgeting structure to clearly delineate separate PEs for these two efforts as follows: (1) this PE will be retitled as MC2A and (2) a new PE, titled 'Horizontal Integration', will be added. The realigned Air Force PE structure is expected to be in place no later than the FY05 APOM.</p> <p>(U) <b><u>A. Mission Description</u></b>          Project 675064, Airframe, is established within the MC2 Constellation PE 0207449F to develop a manned, next generation wide area surveillance platform to provide a near real-time, horizontally integrated view of the air and surface battlespace through the use of advanced sensors, network centric warfare and high-speed, wide band communications. This platform, the Multi-sensor Command and Control Aircraft (MC2A), is the 'hub' of the MC2 constellation's network centric systems architecture.</p> <p>The Multi-sensor Command and Control Aircraft (MC2A) will be a manned 767-400ER aircraft with advanced air/ground sensors, data links and communications to enable persistent battlespace awareness. MC2A's capability will be developed in evolutionary spirals. Spiral 1 is funded to provide the next generation Ground Moving Target Indicator (GMTI) for counter land mission capability, focused AMTI for Cruise Missile Defense (CMD), an open system architecture facilitating Battle Management, Command and Control (BMC2) and growth potential for UAV control, space-based radar interface and Intelligence, Surveillance and Reconnaissance (ISR) management functions. The MC2A spiral 1 sensor capability is provided via the MP-RTIP program. MP-RTIP, formerly a pre-planned product improvement to Joint STARS, will deliver a significantly enhanced wide area surveillance capability to the warfighter. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. MC2A, with improved wide area surveillance capability, will greatly improve the commander's ability to detect, locate, classify, track, and monitor moving targets, provide target information to assigned aerospace and ground weapons systems thus enabling persistent battlespace awareness.</p>											
Project 5064			Page 4 of 14 Pages				Exhibit R-2A (PE 0207449F)				

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

DATE February 2003

BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>	PROJECT <b>5064</b>
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(U) A. Mission Description Continued

Funds in Project 675064 will be used to (1) incrementally fund the purchase a Boeing 767-400ER aircraft and (2) design, develop, and execute the transformation of the 'green'/commercial 767-400ER into a MC2A testbed to deliver Spiral 1 capabilities. This activity will yield a 'smart' design to preserve size, weight and power allocations for future MC2A spirals. This 767-400ER testbed will be MC2A Spiral 1 production representative to demonstrate operational capability in the Developmental Testing/Operational Testing environment.

(U) FY 2002 (\$ in Thousands)

- (U) \$0 Activity prior to FY03 reported in PE 0207851F, Project 674995
- (U) \$0 Total

(U) FY 2003 (\$ in Thousands)

- (U) \$20,500 Horizontal Integration Efforts
- (U) \$20,000 Begin Incremental funding of a 767-400ER testbed
- (U) \$58,394 Begin systems engineering associated with the modification of the commercial testbed
- (U) \$2,000 Begin BMC2 efforts
- (U) \$24,000 Begin Weapons Systems Integration (WSI) efforts
- (U) \$601 SPO Ops Effort
- (U) \$125,495 Total

\*\* FY 2003: \$147M in DERF was added to the MC2 Constellation PE as follows: \$85.3M to MC2A airframe (BPAC 675064); which includes \$20.5M for the horizontal integration efforts. The remaining \$61.7M is for the acceleration of MP-RTIP sensor development in (BPAC 675065).

(U) FY 2004 (\$ in Thousands)

- (U) \$50,000 Continue Incremental funding of a 767-400ER testbed
- (U) \$85,305 Continue systems engineering and design activities associated with the modification of the commercial testbed
- (U) \$20,000 Continue BMC2 efforts
- (U) \$27,000 Continue Weapon Systems Integration (WSI) efforts
- (U) \$25,000 Lab/Test Lab/Test Hardware
- (U) \$300 Conduct Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvement and implementation of C2ISR capabilities to enable a joint global strike task force
- (U) \$700 Continue SPO Ops Effort

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2003</b>																																																																									
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>			PROJECT <b>5064</b>																																																																									
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2004 (\$ in Thousands) Continued</u></p> <p>(U) \$208,305                      Total</p> <p>(U) <b><u>B. Project Change Summary</u></b> Not Applicable.</p> <p>** FY 2003: \$147M in DERF was added to the MC2 Constellation PE as follows: \$85.3M to MC2A airframe (BPAC 675064); which includes \$20.5M for the horizontal integration efforts. The remaining \$61.7M is for the acceleration of MP-RTIP sensor development in (BPAC 675065).</p> <p>(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&amp;E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PE 0207449F/Project 675065 Sensors</td> <td align="right">0</td> <td align="right">208,369</td> <td align="right">155,325</td> <td align="right">190,428</td> <td align="right">170,247</td> <td align="right">87,424</td> <td align="right">41,695</td> <td align="right">0</td> <td align="center">Continuing</td> <td align="center">TBD</td> </tr> <tr> <td>(U) PE 0207581F/Project 674995 MP-RTIP</td> <td align="right">73,170</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="center">Continuing</td> <td align="center">Continuing</td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b> The MC2A acquisition strategy was endorsed by the Air Force on 13 Jan 03. Upon OSD(AT&amp;L) approval, the program will enter an 18-month pre-System Development &amp; Demonstration phase. In FY03 the following events will occur: (1) the incrementally funded purchase order for the 767-400ER will be placed (2) system design engineering will be initiated to transform the 'green'/commercial 767-400ER into an operationally representative MC2A testbed (3) MC2A Weapons System Integration effort will commence and (4) a competitive selection for a BMC2 provider will begin. MC2A Spiral 1 System Development &amp; Demonstration (SDD) will begin after the MC2A Milestone B decision in FY 2004.</p> <p>(U) <b><u>E. Schedule Profile</u></b></p> <table style="width:100%; border: none;"> <tr> <td style="width: 50%;"></td> <td align="center"><u>FY 2002</u></td> <td style="width: 20%;"></td> <td align="center"><u>FY 2003</u></td> <td style="width: 20%;"></td> <td align="center"><u>FY 2004</u></td> </tr> </table>										<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) PE 0207449F/Project 675065 Sensors	0	208,369	155,325	190,428	170,247	87,424	41,695	0	Continuing	TBD	(U) PE 0207581F/Project 674995 MP-RTIP	73,170	0	0	0	0	0	0	0	Continuing	Continuing	(U) Other APPN												<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																						
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																																							
(U) AF RDT&E																																																																																
(U) PE 0207449F/Project 675065 Sensors	0	208,369	155,325	190,428	170,247	87,424	41,695	0	Continuing	TBD																																																																						
(U) PE 0207581F/Project 674995 MP-RTIP	73,170	0	0	0	0	0	0	0	Continuing	Continuing																																																																						
(U) Other APPN																																																																																
	<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>																																																																											
Project 5064			Page 6 of 14 Pages			Exhibit R-2A (PE 0207449F)																																																																										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2003								
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT							
<b>07 - Operational System Development</b>				<b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>				<b>5064</b>							
(U) <b><u>E. Schedule Profile Continued</u></b>															
				<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>	
				1	2	3	4	1	2	3	4	1	2	3	4
(U) Initiate System Design Engineering									X						
(U) Place incrementally funded purchase order for a 767-400ER										X					
(U) Initial Design Review (IDR)															X
* Denotes completed event															
X Denotes planned event															
Project 5064				Page 7 of 14 Pages				Exhibit R-2A (PE 0207449F)							

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>	<b>PROJECT</b> <b>5064</b>
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(U) **A. Project Cost Breakdown (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
(U) Horizontal Integration Efforts	0	20,500	0
(U) Purchase testbed		20,000	50,000
(U) Systems Engineering	0	58,394	85,305
(U) BMC2	0	2,000	20,000
(U) Weapons Systems Integration (WSI)		24,000	27,000
(U) Lab/Test Hardware	0	0	25,000
(U) Future Studies/Spiral Development	0	0	300
(U) SPO Ops Support	0	601	700
(U) Total	0	125,495	208,305

\*\* FY 2003 funding includes: \$85.3M DERF to MC2A airframe (BPAC 675064); which includes \$20.5M for the horizontal integration efforts.

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

(U) **Performing Organizations:**

<u>Contractor or Government</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
TBD	TBD	TBD					124,394	206,405	Continuing	TBD
Note: Awaiting competition results to determine contract award.										
<u>Support and Management Organizations</u>										
Program Office Support	N/A	N/A					601	700	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFOTEC	Allotment	N/A					500	1,100	Continuing	TBD
JTF	Allotment	N/A					0	100	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207449F Multi-sensor Command and Control Constellation (MC2C)			PROJECT 5064		
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						124,394	206,405	TBD	TBD
Subtotal Support and Management						601	700	TBD	TBD
Subtotal Test and Evaluation						500	1,200	TBD	TBD
Total Project						125,495	208,305	TBD	TBD
** FY 2003 funding includes: \$85.3M DERF to MC2A airframe (BPAC 675064); which includes \$20.5M for the horizontal integration efforts.									

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>	<b>PROJECT</b> <b>5065</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5065 Sensors	0	208,369	155,325	190,428	170,247	87,424	41,695	0	Continuing	TBD

1. In FY 2003, the Air Force established a program element called the Multi-sensor Command and Control Constellation (MC2C) to support the development of the constellation's key node -- the Multi-sensor Command and Control Aircraft (MC2A). The MC2 Constellation will be a horizontally integrated architecture of Command and Control (C2) and Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to support global and theater persistent battlespace awareness. Its central element is the MC2 Aircraft (MC2A) which is a key enabler of the national military anti-access strategy, the AEF Task Force concept, and the joint cruise missile defense (CMD) architecture. The MC2C PE absorbed, and continued, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) previously reported in PE 0207581F Joint STARS, Project Number 674995. Additionally, it supports the transition of hosting the MP-RTIP sensor on a 767-400ER platform vice a 707 airframe with funding transferred from PE 0207581F Joint STARS, Project Number 670003. With the current funding profile, delivery of the required four MC2A spiral 1 aircraft is planned for CY13, one year late to Defense Planning Guidance direction. To clarify the programmatic confusion between the MC2 Aircraft (MC2A) and the MC2 Constellation, the Air Force is in the midst of revising its budgeting structure to clearly delineate separate PEs for these two efforts as follows: (1) this PE will be retitled as MC2A and (2) a new PE, titled 'Horizontal Integration', will be added. The realigned Air Force PE structure is expected to be in place no later than the FY05 APOM.

**(U) A. Mission Description**

Established in FY03, the MC2 Constellation PE 0207449F, Project 5065, Sensors, develops an integrated intelligence, surveillance, and reconnaissance capability to support network centric operations.

The Multi-Platform Radar Technology Insertion Program (MP-RTIP) is the sensor capability of the MC2 Aircraft Spiral 1 weapons system. MP-RTIP, as reported in the FY 2001 and FY 2002 R-2 Exhibits for PE 0207581F, was originally developed as a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will now deliver a 'family' of sensor capability for two systems -- the Multi-sensor Command and Control Aircraft (MC2A) and Global Hawk. MP-RTIP will be a modular, scalable, two-dimensional active electronically scanned array (2D-AESA) radar. The development, fabrication, and test of the MP-RTIP 'family of radars' on the various platforms (MC2A 767-400ER testbed and Global Hawk) will utilize funds in PE 0207449F Project 5065. The MP-RTIP program no longer includes funding for the fabrication of a NATO AGS radar (formerly known as the NATAR radar) due to the lack of a NATO AGS platform selection decision, but continues to support NATO AGS' radar definition and early design development activities.

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

- (U)** \$0 Activity prior to FY03 reported in PE 0207581F, Project 674995.
- (U)** \$0 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		February 2003
PE NUMBER AND TITLE <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>		PROJECT <b>5065</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$205,535 Continue Multi-Platform RTIP radar design and development for integration on a MC2A 767-400ER and Global Hawk target platforms</p> <p>(U) \$1,910 Continue Test Efforts (includes Operator-In-The-Loop [OITL]; Joint Test Force Support; AFOTEC Support, and Independent Verification &amp; Validation IV&amp;V).</p> <p>(U) \$324 Continue SPO Operations</p> <p>(U) \$600 Continue Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force.</p> <p>(U) \$208,369 Total</p> <p>**FY03: Funding includes: \$61.7M DERF to continue MP-RTIP radar design and development for integration on a MC2A 767-400ER and Global Hawk platforms.</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$153,754 Continue Multi-Platform RTIP radar design and development for integration on a MC2A 767-400ER and Global Hawk target platforms</p> <p>(U) \$1,137 Continue Test Efforts (includes Operator-In-The-Loop [OITL]; Joint Test Force Support; AFOTEC Support, and Independent Verification &amp; Validation IV&amp;V).</p> <p>(U) \$100 Continue Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force.</p> <p>(U) \$334 Continue SPO Operations</p> <p>(U) \$155,325 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b> Not Applicable.</p> <p> </p> <p>**FY03 DERF funding is reflected in the MC2 Constellation PE as follows: \$61.7M for acceleration of MP-RTIP sensor development.</p>		
Project 5065	Page 11 of 14 Pages	Exhibit R-2A (PE 0207449F)



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>				PROJECT <b>5065</b>		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E											
(U) PE 0207449F/Project 675064 Airframe	0	125,495	208,305	360,432	372,211	256,545	113,841	21,315	Continuing	TBD	
(U) PE 0207581F/Project 674995 MP-RTIP	73,170	0	0	0	0	0	0	0	Continuing	Continuing	
(U) PE 0305206F/Project 674819	9,000	10,000	7,000	2,000	0	0	0	0	Continuing	Continuing	
(U) PE 0305205F/Project 674799	0	11,000	32,000	34,000	18,000	8,000	0	0	Continuing	Continuing	
(U) Other APPN											
<b>(U) D. Acquisition Strategy</b>											
The MP-RTIP program is currently planned to provide sensors for five MC2A aircraft and 12 Global Hawk air vehicles. LRIP quantities will be established at the MP-RTIP Milestone B in FY03.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) **RADAR REQUIREMENTS REVIEW				*							
(U) **RADAR FUNCTIONAL REVIEW					*						
(U) INITIAL DESIGN REVIEW (IDR)							X				
(U) MILESTONE B								X			
(U) FINAL DESIGN REVIEW (FDR)										X	
* Denotes completed event											
X Denotes planned event											
** Activity begun prior to FY 2003 under PE 0207581F, Joint STARS, Projects 670003 and 674995.											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>			<b>5065</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>	<u>FY 2003</u>			<u>FY 2004</u>
(U)	MP-RTIP					0	205,535			153,754
(U)	Test Efforts (OITL, JTF, AFOTEC, IV&V)					0	1,910			1,137
(U)	SPO Operations					0	324			334
(U)	Future Studies/Spiral Development					0	600			100
(U)	Total					0	208,369			155,325
<p>Prior to FY01 the MP-RTIP funding was included in Joint STARS/ PE 0207581F, Project 670003. In FY02, MP-RTIP funding was then reported in Joint STARS/PE 0207581F, Project 674995. In FY03, the MC2 Constellation PE, 0207449F, absorbed and continued the MP-RTIP effort.</p> <p>**FY 2003 funding includes: \$61.7M DERF to continue acceleration of MP-RTIP radar design and development for integration onto a MC2A 767-400ER and Global Hawk platforms.</p>										
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Northrop	CPAF	DEC 00	456,973	456,973	136,325	0	205,535	153,754	Continuing	TBD
Grumman-Multi-Platform Radar Technology Insertion Program (MP-RTIP) **										
MIT/Lincoln Labs	Various	Various	N/A	N/A			600	100	Continuing	TBD
** FY 2002 Budget \$73.170 reflected in Program Element 0207581F (JSTARS), Project 4995 (MP-RTIP)										
** FY 2003: \$61.7M DERF added to Project 5065.										
<u>Support and Management Organizations</u>										
Program Office Support	N/A	N/A	N/A	N/A			324	334	Continuing	TBD
Project 5065					Page 13 of 14 Pages			Exhibit R-3 (PE 0207449F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0207449F Multi-sensor Command and Control Constellation (MC2C)</b>				<b>5065</b>		
<b>(U) <u>Performing Organizations Continued:</u></b>										
<u>Test and Evaluation Organizations</u>										
OITL	Allotment	N/A	N/A	N/A	1,150	1,000	Continuing	TBD		
JTF Support	Allotment	N/A	N/A	N/A	60	0	Continuing	TBD		
AFOTEC Support	Allotment	N/A	N/A	N/A	700	0	Continuing	TBD		
IV&V	Allotment	N/A	N/A	N/A	0	137	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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Subtotals</u>				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development				136,325	0	206,135	153,854	TBD	TBD	
Subtotal Support and Management						324	334	TBD	TBD	
Subtotal Test and Evaluation						1,910	1,137	TBD	TBD	
Total Project				136,325	0	208,369	155,325	TBD	TBD	
** FY 2002: Budget \$73,170 reflected in JSTARS/PE 0207581F, Project 4995 (MP-RTIP)										
** FY 2003: \$147M in DERF added to the MC2 Constellation PE.										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 2003	
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207581F JOINT STARS					
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	147,682	60,317	58,431	89,481	128,765	79,524	71,874	59,290	Continuing	TBD
0003 JSTARS	74,512	60,317	58,431	89,481	128,765	79,524	71,874	59,290	Continuing	TBD
4995 Multi-Platform RTIP	73,170	0	0	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**  
 This program element funds the Joint Surveillance Target Attack Radar System (Joint STARS).  
  
 The Joint STARS program produces the world's premier airborne ground surveillance platform, to meet both Air Force and Army requirements. The 707-based E-8C Joint STARS aircraft provides near-real-time surveillance and targeting information on moving and stationary targets, slowly moving rotary- and fixed-wing aircraft, and rotating antennae. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. This capability enables commanders to effectively make and execute battle decisions.  
  
 Until FY03, this program element also funded the Multi-Platform Radar Technology Insertion Program (MP-RTIP). Beginning in FY03, MP-RTIP funding is identified under PE 27449F.

(U) **B. Budget Activity Justification**  
 This program is in Budget Activity 7, Operational Systems Development, due to efforts supporting a fielded, post MS III operational weapon system. These funds are required to meet the requirements, capabilities and efforts further defined in the 'Mission Description' section of the following R-2A.

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

DATE  
**February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0207581F JOINT STARS**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	152,728	55,515	112,207	TBD
(U) Appropriated Value	155,359	55,515		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-2,631	-561		
b. Small Business Innovative Research	-4,244			
c. Omnibus or Other Above Threshold Reprogram		-548		
d. Below Threshold Reprogram	-79			
e. Rescissions	-723	-89		
(U) Adjustments to Budget Years Since FY 2003 PBR		6,000	-53,776	TBD
(U) Current Budget Submit/FY 2004 PBR	147,682	60,317	58,431	TBD

(U) **Significant Program Changes:**

FY04: GATM and Attack Support Upgrade (ASU) shifted one year to the right to support higher AF priorities. Also, the majority of ASU funding was transferred to the centrally controlled Tactical Datalink program element (#0207448F).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003																
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0207581F JOINT STARS					PROJECT 0003																
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost														
0003	JSTARS	74,512	60,317	58,431	89,481	128,765	79,524	71,874	59,290	Continuing	TBD														
<p>In FY2003 the Air Force established a program element for the Multi-Platform Radar Technology Insertion Program (MP-RTIP). Effective with FY03 funding, MP-RTIP efforts was transferred to PE 27449F, Multi-Sensor Command &amp; Control Constellation, from PE 27581F Joint STARS, BPAC 674995.</p> <p>(U) <b>A. Mission Description</b>                      The Joint Surveillance Target Attack Radar System (Joint STARS) program produces the world's premier airborne ground surveillance platform, to meet both Air Force and Army requirements. The 707-based E-8C Joint STARS aircraft provides near-real-time surveillance and targeting information on moving and stationary ground targets, slowly moving rotary and fixed wing aircraft, and rotating antennae. Joint STARS provides target information for pairing direct attack aircraft and standoff weapons against selected targets. The system is capable of being cued by other reconnaissance, surveillance, and target acquisition systems and is able to respond rapidly to worldwide contingencies. This capability enables commanders to effectively make and execute battle decisions.</p> <p>The program enhances the warfighter's capability to achieve the Global Strike Task Force vision. It develops advanced battle management aids and information fusion to enable rapid decisions in tracking and killing time critical targets and achieving a predictive battlespace awareness environment. Concept exploration, program definition/risk reduction efforts, and various studies support continuous improvements in C2ISR capabilities. These efforts include, but are not limited to, manned and unmanned platforms, space data links and advanced BMC3 concepts. They also include ISR Constellation, Air Moving Target Indicator (AMTI), Ground Moving Target Indicator (GMTI) and other large airborne platform integration efforts, which will provide greater mission capability, higher mission reliability, and maximum aircraft availability.</p> <p>(U) <b>FY 2002 (\$ in Thousands)</b></p> <table border="0"> <tr> <td>(U) \$14,446</td> <td>Continue Training &amp; Support Systems Development (Support &amp; Training System [STS] Phase I)</td> </tr> <tr> <td>(U) \$20,795</td> <td>Continue SATCOM, Connectivity, Attack Support Upgrade (ASU) efforts, etc.</td> </tr> <tr> <td>(U) \$27,053</td> <td>Continue test efforts (for example: Joint Test Force (JTF), JSTARS Extended Test Support (JETS) contract, range support, support of T-3 test aircraft, and test labs)</td> </tr> <tr> <td>(U) \$5,599</td> <td>Reduced Vertical Separation Minimum (RVSM)</td> </tr> <tr> <td>(U) \$3,742</td> <td>Indirect SPO Operations support</td> </tr> <tr> <td>(U) \$2,877</td> <td>Kill Chain/Spiral Development (for example: Air Tasking Order (ATO) Parser, Protection Level 2 (PL2), Network-Centric Collaborative Targeting (NCCT), Advanced Development activities, etc.)</td> </tr> <tr> <td>(U) \$74,512</td> <td>Total</td> </tr> </table>												(U) \$14,446	Continue Training & Support Systems Development (Support & Training System [STS] Phase I)	(U) \$20,795	Continue SATCOM, Connectivity, Attack Support Upgrade (ASU) efforts, etc.	(U) \$27,053	Continue test efforts (for example: Joint Test Force (JTF), JSTARS Extended Test Support (JETS) contract, range support, support of T-3 test aircraft, and test labs)	(U) \$5,599	Reduced Vertical Separation Minimum (RVSM)	(U) \$3,742	Indirect SPO Operations support	(U) \$2,877	Kill Chain/Spiral Development (for example: Air Tasking Order (ATO) Parser, Protection Level 2 (PL2), Network-Centric Collaborative Targeting (NCCT), Advanced Development activities, etc.)	(U) \$74,512	Total
(U) \$14,446	Continue Training & Support Systems Development (Support & Training System [STS] Phase I)																								
(U) \$20,795	Continue SATCOM, Connectivity, Attack Support Upgrade (ASU) efforts, etc.																								
(U) \$27,053	Continue test efforts (for example: Joint Test Force (JTF), JSTARS Extended Test Support (JETS) contract, range support, support of T-3 test aircraft, and test labs)																								
(U) \$5,599	Reduced Vertical Separation Minimum (RVSM)																								
(U) \$3,742	Indirect SPO Operations support																								
(U) \$2,877	Kill Chain/Spiral Development (for example: Air Tasking Order (ATO) Parser, Protection Level 2 (PL2), Network-Centric Collaborative Targeting (NCCT), Advanced Development activities, etc.)																								
(U) \$74,512	Total																								
Project 0003		Page 3 of 13 Pages					Exhibit R-2A (PE 0207581F)																		

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

DATE

February 2003

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

07 - Operational System Development

0207581F JOINT STARS

0003

(U) **A. Mission Description Continued**(U) FY 2003 (\$ in Thousands)

(U) \$15,881	Complete SATCOM EMD effort, Continue ASU support, connectivity efforts, etc.
(U) \$28,067	Continue test effort (for example: JTF, JETS, range support, support of T-3 and test labs)
(U) \$1,209	Kill Chain Enhancements/Spiral Development (for example: PL2, NCCT, special studies, advanced development activities, etc.).
(U) \$5,640	Airborne Battlefield Command & Control Center (ABCCC) migration to Joint STARS
(U) \$3,520	Indirect SPO Operations support
(U) \$3,500	Joint Services Work Station (JSWS) (Congressional add)
(U) \$2,500	Global Air Traffic Management (GATM) (Congressional add)
(U) \$60,317	Total

(U) FY 2004 (\$ in Thousands)

(U) \$7,900	Continue Training & Support Systems development (STS Phase II)
(U) \$50	Continue ASU support, connectivity efforts, etc. (completion will defer until ASU Phase II in FY05)
(U) \$37,180	Continue test effort (for example: JTF, JETS, range support, support of T-3, test labs, and T-3 Wing Structure Improvement Program)
(U) \$3,136	Indirect SPO Operations support
(U) \$766	GATM contract preparation efforts
(U) \$8,100	Continue ABCCC migration to Joint STARS
(U) \$1,299	Continue Kill Chain/Spiral Development (for example: PL2, NCCT, special studies, advanced development activities, Advanced Radar Modes, Automatic Target Recognition, Improved Tracking Tools, etc.).
(U) \$58,431	Total

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

This program is in Budget Activity 7 - Operational System Development. Initial operational capability was achieved in Dec 97. Developmental work continues on advanced planning activities and systems upgrades, as well as systems integration and interoperability efforts.

- Attack Support Upgrade will enable JSTARS to datalink targeting data directly to attack fighters via Link 16
- STS Phase I developed and delivered a new training simulator in the new Block 20 configuration
- STS Phase II will develop a Block 20 upgrade for the original training simulator
- WSIP accounts for FY04 increase in test cost. It is a one-time wing structure upgrade of the dedicated test aircraft. The whole fleet will receive the same mod.
- ABCCC refers to the retirement of the EC-130E ABCCC fleet and the transfer of 10 ABCCC functions to JSTARS--the required modifications are mission management software and an additional satcom radio

Project 0003

Page 4 of 13 Pages

Exhibit R-2A (PE 0207581F)

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207581F JOINT STARS</b>	<b>PROJECT</b> <b>0003</b>
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**(U) C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Aircraft Procurement, AF, BP10 (PE 27581F)	295,237	268,578	0	0	0	0	0	0		TBD
(U) Modifications, BP11 (PE 27581F)	69,194	18,598	29,043	45,608	16,254	23,463	55,356	32,634		TBD
(U) Spares, BP16 (PE 27581F)	26,364	1,810	15,699	2,804	582	1,099	1,262	1,354		TBD
(U) Quantity, Joint STARS E-8C Aircraft Proc.	1	1								

**(U) D. Acquisition Strategy**

Joint STARS Low Rate Initial Production (LRIP) was approved by the Defense Acquisition Board (DAB) in FY93. Acquisition began with the procurement of 2 E-8Cs in FY93, and continued at 2 E-8Cs per year through FY97. Procurement funding continued with 1 E-8C in FY98, 2 E-8Cs in FY99, 1 E-8C in FY00, 1 E-8C in FY01 and 1 E-8C in FY02, and 1 E-8C in FY03.

**(U) E. Schedule Profile**

	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) RVSM Contract Award			*									
(U) Support & Training Sys. (STS) Phase I Complete--install Blk 20 trainer					*							
(U) SATCOM Development Complete									X			
(U) Flight Crew Training System (FCTS) Delivered									X			
(U) STS Phase II Contract Award--develop Block 20 trainer										X		
(U) ABCCC Contract Award									X			
(U) ASU Contract Award									X			

\* Denotes completed event  
X Denotes planned event



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207581F JOINT STARS			PROJECT 0003			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>	
(U)	JSWS					0		3,500		0	
(U)	Training & Support Systems					14,446		0		7,900	
(U)	SATCOM, ASU, Connectivity, etc.					20,795		15,881		50	
(U)	Test Efforts					27,053		28,067		37,180	
(U)	GATM					0		2,500		766	
(U)	Indirect SPO Support					3,742		3,520		3,136	
(U)	Kill Chain Enhancements/Spiral Development					2,877		1,209		1,299	
(U)	Reduced Vertical Separation Minimum (RVSM)					5,599		0		0	
(U)	ABCCC Migration					0		5,640		8,100	
(U)	Total					74,512		60,317		58,431	
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	NG -STS Phase I/II	FFP	Dec 00	N/A	N/A	0	14,446	0	7,900	Continuing	TBD
	NG - SATCOM EMD	CPFF	May 97	36,574	36,574	8,370	20,795	7,409	0	0	36,574
	NG - ASU	TBD	Dec 02	N/A	N/A	0	0	8,472	50	Continuing	TBD
	NG - GATM	T&M/CPFF	Mar 01	134,421	4,847	0	0	2,500	766	Continuing	TBD
	NG - Kill Chain/Spiral	Various	Various	N/A	N/A	0	2,877	1,209	1,299	Continuing	TBD
	NG - Multi-Platform Radar	CPFF	May 97	22,372	22,372	22,372	0	0	0	0	22,372
	Tech. Insertion Prog.										
	NG - Other Dev. Efforts	Various	Various	N/A	N/A	2,339,634	0	3,500	0	0	2,343,134
	NLX Corp - Flight Crew	FFP	Sep 00	N/A	N/A	0	0	0	0	0	0
	Training Sys										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>					<b>0207581F JOINT STARS</b>					<b>0003</b>	
<b>(U) <u>Performing Organizations Continued:</u></b>											
<u>Product Development Organizations</u>											
NG - RVSM	CPFF	Sep 02	5,599	5,599	0	5,599	0			0	5,599
ABCCC Migration	Various	Various	N/A	N/A	0	0	5,640	8,100		0	13,740
** Northrop Grumman											
<u>Support and Management Organizations</u>											
Indirect SPO Ops Support		N/A	N/A	N/A	0	3,742	3,520	3,136	Continuing		TBD
<u>Test and Evaluation Organizations</u>											
NG - E-8C JSTARS Ext. Test SS/FFP/CPFF Spt (JETS)		Aug 96	N/A	N/A	37,364	20,026	20,647	27,341	Continuing		TBD
Horizons Tech., Inc.	T&M	Various	N/A	N/A	36,136	4,909	4,821	5,500	Continuing		TBD
JTF Range/Support	SubAllotment	N/A	N/A	N/A	52,559	2,118	2,599	4,339	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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>		<u>Program</u>
<u>Product Development Property</u>											
N/A											
<u>Support and Management Property</u>											
N/A											
<u>Test and Evaluation Property</u>											
N/A											
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>		<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>		<u>Program</u>
Subtotal Product Development					2,370,376	43,717	28,730	18,115	TBD		TBD
Subtotal Support and Management					0	3,742	3,520	3,136	TBD		TBD
Subtotal Test and Evaluation					126,059	27,053	28,067	37,180	TBD		TBD
Total Project					2,496,435	74,512	60,317	58,431	TBD		TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>	
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>					PROJECT <b>4995</b>	
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4995    Multi-Platform RTIP	73,170	0	0	0	0	0	0	0	Continuing	TBD
<p>1. In FY 2002, Project Number 674995, Multi-Platform RTIP was established within PE 0207581F, Joint STARS, using existing RTIP funds from PE 0207581F, Joint STARS, Project Number 670003, JSTARS, to better track program funding. Commencing in FY 2003, funding for this continuing project transferred to PE 0207449F Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP radar on 767-400ER platform.</p> <p>(U) <b><u>A. Mission Description</u></b>  The Multi-Platform Radar Technology Insertion Program (MP-RTIP) program is the result of a restructuring of the Joint STARS Radar Technology Insertion Program (RTIP), formerly a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will deliver enhanced Wide Area Surveillance (WAS) system capabilities to the warfighter which include an advanced Ground Moving Target Indicator (GMTI) capability and a focused Air Moving Target Indicator (AMTI) for a Cruise Missile Defense (CMD) capability. MP-RTIP also provides for a robust Global Hawk reconnaissance capability, and enables the NATO Alliance Ground Surveillance (AGS) program. This WAS system capability will allow commanders to conduct wide area surveillance to detect, locate, classify, track, and monitor moving targets and provide target information to assigned direct aerospace and ground weapons systems. Wide-Area surveillance is required to monitor the movement and disposition of enemy forces and for use in resource prioritization, force allocation and Intelligence Preparation of the Battlefield at Army, Navy and Air Force Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) elements. To that end, MP-RTIP will include design of a modular, scalable two-dimensional active electronically scanned array (2D-AESA) radar, and development, fabrication, and test of MP-RTIP radars suitable for future integration on various airborne platforms. Specifically, this modular, scalable radar, when integrated on a 767-400ER, must deliver mission capability as reflected in the validated RTIP Operational Requirements Document (ORD) by 2012. Although the users' need date for an RTIP capability remains 2010; the user has accepted the 2012 delivery date. The radar, when integrated on an unmanned air vehicle, will provide enhanced Global Hawk (GH) capability. The MP-RTIP program plan no longer includes the fabrication of a radar for the NATO Alliance Ground Surveillance (AGS) (formerly known as the NATAR radar) due to a lack of a NATO AGS platform decision. The MP-RTIP program continues to support the NATO AGS radar definition effort and early decision analysis activities. The MP-RTIP program includes concept exploration, technology development, system development/demonstration, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.</p>										
Project 4995			Page 8 of 13 Pages				Exhibit R-2A (PE 0207581F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY <b>07 - Operational System Development</b>		February 2003
PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>		PROJECT <b>4995</b>
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$69,644 Continue Multi-Platform RTIP radar design and development for Wide Area Surveillance (WAS), Global Hawk target platforms, and NATO Alliance Ground Surveillance (AGS).</p> <p>(U) \$1,760 Continue Test Efforts (includes Operator-In-The-Loop [OITL]; Joint Test Force Support; AFOTEC Support)</p> <p>(U) \$1,166 Continue SPO Operations</p> <p>(U) \$600 Continue Future Studies/Spiral Development--includes concept exploration, program definition/risk reduction, and spiral development efforts supporting continuous improvements and implementation of Command &amp; Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities to enable a joint global strike task force. These efforts include but are not limited to manned and unmanned platforms, space, data links, combat identification, and advanced battle management command, control, and communications (BMC3) concepts.</p> <p>(U) \$73,170 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$0 Continuing activity transferred to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER.</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$0 Continuing activity transferred to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER.</p> <p>(U) \$0 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></p> <p>This program is in Budget Activity (BA) 7, Operational System Development. In an Acquisition Decision Memorandum dated 11 Dec 00, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) was created from the Radar Technology Insertion Program (RTIP) to leverage the RTIP Wide Area Surveillance radar design for application to the Global Hawk and NATO AGS platforms. The MP-RTIP program is a result of a restructuring of the Joint STARS RTIP program, formerly a Pre-Planned Product Improvement to Joint STARS.</p>		
Project 4995	Page 9 of 13 Pages	Exhibit R-2A (PE 0207581F)

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207581F JOINT STARS</b>	<b>PROJECT</b> <b>4995</b>
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**(U) B. Project Change Summary Continued**

Specific Changes:

FY 2002: Decrease of \$4.326M reflects reallocation of prior year poor execution reduction to this Project (original reduction was not split between projects), Small Business Innovative Research reductions, and BTRs.

FY 2003: Continuing activity in FY 2003 for this project transferred to PE 0207449F Multi-sensor Command and Control Constellation (MC2C), Project 675065 Sensors, reflecting decision to host MP-RTIP radar on 767-400ER platform. Transferred funding increased by \$10,325 for additional risk reduction testing during radar design.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) PE 0305206F/Project 4819	9,000	10,000	7,000	2,000	0	0	0	0	0	28,000
(U) PE 0305205F/Project 4799	0	17,000	40,000	13,000	1,000	0	0	0	0	71,000
(U) Other APPN										

**(U) D. Acquisition Strategy**

The MP-RTIP program is currently planning for five (one test and four operational) manned WAS aircraft\*\*, as well as a number of Global Hawk air vehicles, to receive the 2D-AESA radars. Low Rate Initial Production (LRIP) quantity is one sensor kit for the WAS aircraft, and seven sensors for Global Hawk. Exit criteria will be established at MS B that must be satisfied prior to proceeding with LRIP. All other procurement activities for all platforms will be formally updated at MS B.

\*\*Note: WAS aircraft numbers based on decision to host MP-RTIP sensor on a 767-400ER. In FY2003 activity transfers to Program Element 0207449F, Multi-sensor Command and Control Constellation (MC2C).

**(U) E. Schedule Profile**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) RADAR REQUIREMENTS REVIEW	*											
(U) RADAR FUNCTIONAL REVIEW		*										
(U) MP-RTIP PLATFORM DECISION	*											

\* Denotes completed event  
X Denotes planned event

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>										DATE <b>February 2003</b>																									
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207581F JOINT STARS</b>					PROJECT <b>4995</b>																									
<b>(U) E. Schedule Profile Continued</b>																																			
<table style="width:100%; border: none;"> <tr> <td colspan="4" style="text-align: center;"><u>FY 2002</u></td> <td colspan="4" style="text-align: center;"><u>FY 2003</u></td> <td colspan="4" style="text-align: center;"><u>FY 2004</u></td> </tr> <tr> <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> </table>												<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4
<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>																											
1	2	3	4	1	2	3	4	1	2	3	4																								
<p>** Note: FY 2003 activity transfers to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform.</p>																																			
Project 4995				Page 11 of 13 Pages				Exhibit R-2A (PE 0207581F)																											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207581F JOINT STARS			PROJECT 4995		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	MP-RTIP				69,644		0			0
(U)	Test Efforts (OITL, JTF, AFOTEC)				1,760		0			0
(U)	SPO Operations				1,166		0			0
(U)	Future Studies/Spiral Development				600		0			0
(U)	Total				73,170		0			0
<p>MP-RTIP's funding was a part of Joint Stars PE 0207581F, Project 670003 until FY02. For FY 2002, MP-RTIP funding is reported in the Joint Stars PE 0207581F, Project 674995. NATO AGS within the restructured MP-RTIP program continues effort previously begun under JSTARS RTIP program. NATO AGS is not a New Start. Commencing in FY 2003 this continuing activity will transfer to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065, Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform.</p>										
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Northrop Grumman-Multi Platform-Radar Technology Insertion Program (RTIP funding prior to FY02 reported in Project 670003, same PE)	CPAF	DEC 00	N/A	N/A	136,325	69,644	0	0	Continuing	TBD
MIT/Lincoln Labs	Various	Various	N/A	N/A	0	600	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
Program Office Support	N/A	N/A	N/A	N/A	0	1,166	0	0	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0207581F JOINT STARS					4995
<b>(U) Performing Organizations Continued:</b>										
<u>Test and Evaluation Organizations</u>										
OITL	Allotment	N/A	N/A	N/A	0	1,000	0	0	Continuing	TBD
JTF Support	Allotment	N/A	N/A	N/A	0	60	0	0	Continuing	TBD
AFOTEC Support	Allotment	N/A	N/A	N/A	0	700	0	0	Continuing	TBD
** Note: FY 2003 activity transfers to PE 0207449F, Multi-sensor Command and Control Constellation (MC2C); Project 675065 Sensors, reflecting decision to host MP-RTIP on a 767-400ER platform.										
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A	N/A	N/A	N/A		0	0	0	0	Continuing	TBD
<u>Support and Management Property</u>										
N/A	N/A	N/A	N/A		0	0	0	0	Continuing	TBD
<u>Test and Evaluation Property</u>										
N/A	N/A	N/A	N/A		0	0	0	0	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					136,325	70,244	0	0	TBD	TBD
Subtotal Support and Management					0	1,166	0	0	TBD	TBD
Subtotal Test and Evaluation					0	1,760	0	0	TBD	TBD
Total Project					136,325	73,170	0	0	TBD	TBD



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207590F Seek Eagle</b>					PROJECT <b>4037</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4037	SEEK EAGLE Certifications	16,521	16,792	19,587	23,220	21,210	18,357	21,722	22,013	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b>                      The Air Force has a variety of combat aircraft and numerous stores (munitions, missiles, fuel tanks, electronic countermeasures pods, etc.). Aircraft carry these stores in countless different loading combinations determined by operational scenarios, missions, and tactics. Loading configurations change as operational plans and tactics change, and as new aircraft and stores are developed and produced. Before operational use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), and must verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes these certifications through any combination of ground and flight testing, wind tunnel testing, modeling and simulation, and engineering analysis. Over 700 aircraft-store combinations exist to be certified, with new ones added on a regular basis. Depending upon the complexity, certification takes from months to years. The SEEK EAGLE program is also responsible for insertion of new and emerging technologies into the SEEK EAGLE process and providing resources for sustainment of a viable Air Force aircraft-store certification capability. Electronic Technical Orders are developed through the Combat Weapons Delivery Software (CWDS), creating cost savings by eliminating paper technical orders. SEEK EAGLE funds are currently budgeted to support certification for new weapons programs including Wind Corrected Munitions Dispenser (WCMD), Joint Direct Attack Munition (JDAM), Joint Air to Surface Standoff Missile (JASSM), Joint Standoff Weapon (JSOW), AIM-9X, AIM-120 C5 (AMRAAM), and many other inventory stores on inventory aircraft. Planning and budgeting estimations are in progress for future certifications of weapons on F/A-22 and the Joint Strike Fighter (JSF).</p>											
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p>											
(U)	\$0	Accomplishments/Planned Program									
(U)	\$500	Continue development of F/A-22 data and engineering models to use for follow-on F/A-22 weapons certification									
(U)	\$2,963	Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS									
(U)	\$2,559	Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using Applied Computational Fluid Dynamics (ACFD)									
(U)	\$10,499	Conduct various aircraft-store certifications on USAF fighter and bomber aircraft									
(U)	\$16,521	Total									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
		February 2003		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
<b>07 - Operational System Development</b>	<b>0207590F Seek Eagle</b>	<b>4037</b>		
<b>(U) <u>A. Mission Description Continued</u></b>				
<b>(U) <u>FY 2003 (\$ in Thousands)</u></b>				
(U) \$0	Accomplishments/Planned Program			
(U) \$500	Continue development of F/A-22 data and engineering models to use for follow-on F/A-22 weapons certification			
(U) \$3,082	Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS			
(U) \$2,661	Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD			
(U) \$10,549	Conduct various aircraft-store certifications on USAF fighter and bomber aircraft			
(U) \$16,792	Total			
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>				
(U) \$0	Accomplishments/Planned Program			
(U) \$1,500	Continue development of F/A-22 data and engineering models to use for follow-on F/A-22 weapons certification			
(U) \$3,205	Conduct various automation projects and automated Technical Orders/mission planning projects using CWDS			
(U) \$2,768	Continue/complete various technology improvement projects and aircraft load/separation prediction capabilities using ACFD			
(U) \$12,114	Conduct various aircraft-store certifications on USAF fighter and bomber aircraft			
(U) \$19,587	Total			
<b>(U) <u>B. Budget Activity Justification</u></b>				
The RDT&E Budget Activity is 7, Operational Systems Development, because the program supports fielded systems.				
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>				
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	17,654	16,792	20,965	TBD
(U) Appropriated Value	17,833	16,972		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-179	-180		
b. Small Business Innovative Research	-575			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-477			
e. Rescissions	-81			
(U) Adjustments to Budget Years Since FY 2003 PBR			-1,378	
Project 4037				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2003				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207590F Seek Eagle</b>			PROJECT <b>4037</b>				
<b>(U) C. Program Change Summary (\$ in Thousands) Continued</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>				<u>Total Cost</u>			
(U)	Current Budget Submit/FY 2004 PBR	16,521	16,792	19,587				TBD			
(U)	<u>Significant Program Changes:</u>										
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>											
		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>		<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Cost to Complete</u>	
(U)	AF RDT&E										
(U)	Other APPN										
(U)	Proc of Ammunition, AF*										
(U)	- P-1 Line JDAM	147	300	144	0	0	103	0	0	Continuing	965
(U)	- P-1 Line WCMD	0	0	134	0	0	96	0	0	Continuing	4,144
(U)	Missile Procurement, AF*										
(U)	- P-1 Line JSOW	1,032	0	999	0	996	0	0	0	Continuing	22,735
(U)	- P-1 Line AIM-120 C5 (AMRAAM)	0	0	0	0	0	0	0	0	Continuing	15,137
(U)	- P-1 Line AIM-9X, (Sidewinder)	5,378	1,751	0	0	0	0	0	0	Continuing	TBD
(U)	- P-1 Line JASSM	744	3,735	1,485	2,966	0	2,939	0	0	Continuing	11,869
	* Note: The SEEK EAGLE procurement dollars shown above are appropriated in each weapon's P-1 line.										
<b>(U) E. Acquisition Strategy</b>											
Budget authorization for procurement funds are given directly to the weapon system program offices, who then procure the required certification test articles through the weapon production contract.											
<b>(U) F. Schedule Profile</b>											
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>			

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207590F Seek Eagle</b>	<b>PROJECT</b> <b>4037</b>
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**(U) F. Schedule Profile Continued**

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) JDAM	*	*	*	*	*	X	X	X	X	X	X	X
(U) WCMD									X	X	X	X
(U) AIM-9X (Sidewinder)	*	*	*	*	*	X	X	X				
(U) JSOW	*	*	*	*					X	X	X	X
(U) JASSM	*	*	*	*	*	X	X	X	X	X	X	X

Note: The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Each aircraft-store configuration requested by the user goes through the SEEK EAGLE process by the designated user priority.

\* = Completed Event

X = Planned hardware buy in support of upcoming certification activities.

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207590F Seek Eagle			PROJECT 4037		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Process Sustainment					1,004		1,044		1,096
(U)	F/A-22 Data & Engineering Models					500		500		1,500
(U)	Engineering Analysis					5,400		5,400		5,600
(U)	Flight Testing					5,663		5,166		6,286
(U)	Wind Tunnel Testing					191		750		1,000
(U)	Other					2,963		3,082		3,205
(U)	- Ballistic/ Safe Escape Analysis									
(U)	- Tech Order/P.C. Floppy Disk									
(U)	- Loading Process Development/Verification									
(U)	Mission Support					800		850		900
(U)	Total					16,521		16,792		19,587
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin	C/CPFF	Jul 98	15,648	15,648	4,545	500	500	1,500	8,603	15,648
Leigh Aerosystems	FFP	Jan 00	943	943	943	0	0	0	0	943
<u>Support and Management Organizations</u>										
Mission Support	PO/REO	Continuous	N/A	N/A	10,654	800	850	900	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing	PO/REO	Continuous	N/A	N/A	107,848	9,500	9,592	10,687	Continuing	TBD
AEDC	PO/REO	Continuous	N/A	N/A	16,666	191	750	1,000	Continuing	TBD
Various	PO/REO	Continuous	N/A	N/A	54,038	5,530	5,100	5,500	Continuing	TBD

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					<b>DATE</b> <b>February 2003</b>	
<b>BUDGET ACTIVITY</b>			<b>PE NUMBER AND TITLE</b>			<b>PROJECT</b>
<b>07 - Operational System Development</b>			<b>0207590F Seek Eagle</b>			<b>4037</b>
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	5,488	500	500	1,500	8,603	16,591
Subtotal Support and Management	10,654	800	850	900	TBD	TBD
Subtotal Test and Evaluation	178,552	15,221	15,442	17,187	TBD	TBD
Total Project	194,694	16,521	16,792	19,587	TBD	TBD

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

DATE

**February 2003**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation**

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26,889	22,396	8,483	8,577	8,646	8,756	8,909	9,038	Continuing	TBD
1008 National Air and Space Warfare Model (NASM)	18,844	14,841	0	0	0	0	0	0	0	97,510
4567 Joint Modeling and Simulation System (JMASS)	6,832	6,245	6,164	5,257	5,329	5,419	6,970	7,109	Continuing	TBD
5004 Joint Model Transition (JMT)	392	400	403	412	410	414	0	0	Continuing	TBD
5005 Executive Agent For Air /Space Natural Environment	821	910	918	938	956	975	0	0	Continuing	TBD
5122 C4ISR Warfighting Integration	0	0	998	1,970	1,951	1,948	1,939	1,929	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

Provides RDT&E funding for major USAF Modeling and Simulation efforts such as the National Air and Space [Warfare] Model (NASM)-the air and space element of the Joint Simulation System (JSIMS) and the Joint Modeling and Simulation System (JMASS). JSIMS will be the readiness training simulation used to train Combatant Commanders, Services, NAFs and at all simulation centers to train Joint Force Commanders, Joint Task Force staffs, Components and their staffs, including Joint Force Air Component Commanders and Air Operations Center personnel. JMASS provides High Level Architecture (HLA)-compliant architecture for engagement level simulations.

This PE also 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



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

DATE

February 2003

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation****(U) A. Mission Description Continued**

development and interaction for the entire modeling and simulation community. Emphasis is placed on joint applicability and acceptance. AF is the Executive Agent for Air & Space Natural Environment (ASNE) which serves the M&S community as subject matter expert 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 Modeling and Simulation System (JMASS), and Joint and Service component programs (i.e., Joint Strike Fighter (JSF), Missile Defense Agency (MDA), 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. C4ISR Warfighting Integration will enable the oversight of the development and integration of M&S technologies to accurately portray C4ISR assets at USAF Wargaming & Simulation Centers. Primary users will be unified commanders and service components for use in joint or service-specific exercises involving air, ground, sea, and space campaigns.

Provides funding for the development of the Synthetic Theater Operations Research Model (STORM). STORM will replace the current Air Force theater level campaign model, THUNDER, with enhanced capability to feed aerospace representation in the Joint Warfare System (JWARS) and support Quadrennial Defense Reviews. In addition, the Intelligent Flight Control System Simulation Research and Oklahoma City Air Logistics Command (ALC) Modeling and Simulation programs are funded in this PE.

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

This program is in budget activity 7 - Operational System Development, Research Category because it provides RDT&E funding for major USAF Modeling and Simulation efforts.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	25,345	21,895	8,483	
(U) Appropriated Value	30,845	21,895		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-2,559	-283		
b. Small Business Innovative Research	-720			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-620	784		
e. Rescissions	-57			
(U) Adjustments to Budget Years Since FY 2003 PBR				
(U) Current Budget Submit/FY 2004 PBR	26,889	22,396	8,483	TBD

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

DATE

**February 2003**

BUDGET ACTIVITY

**07 - Operational System Development**

PE NUMBER AND TITLE

**0207601F USAF Modeling and Simulation**

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

(U) Significant Program Changes:

Not applicable.

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					PROJECT <b>1008</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
1008	National Air and Space Warfare Model (NASM)	18,844	14,841	0	0	0	0	0	0	0	97,510
<p>(U) <b><u>A. Mission Description</u></b>            This program provides funds for Air Force and Joint wargaming architecture and model development, primarily in support of battlestaff training, education, and military operations. New simulation federate components are being developed by the NASM program to replace the existing Air Force standard Air Warfare Simulation (AWSIM) within the JSIMS system. NASM will expand the use and role of modeling and simulation (M&amp;S) in support of operational and acquisition decision making, and increase the interoperability between Air Force and joint efforts such as Joint Synthetic Battlespace (JSB). NASM includes, but is not limited to, representation of the full range of AFM 1-1 missions to meet the needs of USAF MAJCOMs and Unified/Specified Command air components to train Air Component Commanders and their battle staffs. Additionally, NASM provides the JSIMS Civil Environment for accurate portrayal of strategic and cascading effects. Also, NASM is providing additional common components under JSIMS Alliance resources. Primary users will be the unified command air components, Combatant Commanders, Joint Forces Air Component Commander's (JFACC), and Service components, as supported by the C2 Technology Interoperability Group, the Korean Air Simulation Center (KASC), and the Warrior Preparation Center (WPC) for use in joint exercises involving air, ground, and sea campaigns.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$13,369 Continued development of specific air objects to support JSIMS architecture.</p> <p>(U) \$2,607 Continued NASM integration effort and operate the program management office</p> <p>(U) \$1,000 Upgraded STORM. This task will be realigned under Project 675004, Joint Model Transition.</p> <p>(U) \$1,943 Executed the Congressionally directed Oklahoma City ALC Modeling and Simulation program. The funds were realigned under PE 78026F, PRAM project.</p> <p>(U) \$18,919 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishment/Planned Program</p> <p>(U) \$12,583 Complete VRM 1.0 Validation Test, continue development of VRM 2.0 air and space objects and process models to meet JSIMS integrated master development schedule; initial development of VRM 3.0 air and space objects and process models</p> <p>(U) \$2,258 Continue NASM integration effort and operate the program management office</p> <p>(U) \$14,841 Total</p>											
Project 1008		Page 4 of 19 Pages					Exhibit R-2A (PE 0207601F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2003</b>						
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>			PROJECT <b>1008</b>						
<b>(U) <u>A. Mission Description Continued</u></b>													
<b>(U) <u>FY 2004 (\$ in Thousands)</u></b>													
<b>(U) \$0</b>		Accomplishment/Planned Program											
<b>(U) \$0</b>		Total											
<b>(U) <u>B. Project Change Summary</u></b>													
Not Applicable													
<b>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
<b>(U) AF RDT&amp;E</b>									Continuing	Continuing			
<b>(U) Other APPN</b>									Continuing	Continuing			
<b>(U) <u>D. Acquisition Strategy</u></b>													
NASM provides the Air and Space software components of the Joint Simulation System (JSIMS). Resources are reviewed and measured against an Alliance program baseline, with the Earned Value and performance measurement reporting against the baseline accomplished on a monthly basis. The contract was selected by source selection and is a Cost Plus Award Fee (CPAF).													
<b>(U) <u>E. Schedule Profile</u></b>													
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
		1	2	3	4	1	2	3	4	1	2	3	4
<b>(U) Version 1.0 VRM Ready-for-Test</b>				*									
<b>(U) IOC Version 1.0 Release</b>						*							
<b>(U) Version 1.0 Validation Test</b>							X						
Project 1008													
Page 5 of 19 Pages													
Exhibit R-2A (PE 0207601F)													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 1008		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Software development					13,369		12,583		0
(U)	Program Management/Contractor Support					2,607		2,258		
(U)	Congressional Add; Synthetic Theater Operations Research Model (STORM) upgrade					1,000				
(U)	Oklahoma City ALC Modeling and Simulation programs					1,943				
(U)	Total					18,919		14,841		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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon (NASM)	CPAF	3 Mar 97	74,541	74,541	17,135	13,312	12,583	0	0	43,030
Raytheon (AWSIM/R)	CPAF	7 Apr 94	9,876	9,876	11,454	0	0	0	0	11,454
Hughes (AWSIM/R)	CPAF	2 Jun 94	4,676	4,676	4,059	0	0	0	0	4,059
TRW (AFSOM)	CPAF	12 Dec 97	39	39	39	0	0	0	0	39
SysSimSolutions (STORM)	FFP	11 Aug 00	1,623	1,623	0	1,000	0	0	0	1,000
Oklahoma City ALC	Various	Various	2,000	2,000	0	2,000	0	0	0	2,000
<u>Modeling and Simulation</u>										
<u>Task</u>										
<u>Support and Management Organizations</u>										
Tech Eng Mgt Spt (TEMS)	Del Order	Various	15,413	15,413	8,082	1,215	1,008	0	0	10,305
<u>/ITSP</u>										
MITRE	Contract Mod	Various	13,200	13,200	5,869	1,142	1,000	0	0	8,011
Other*	Various	Various	19,180	19,180	17,112	250	250	0	0	17,612
*Includes Prototype Contracts										
<u>Test and Evaluation Organizations</u>										

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<b>RDT&amp;E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)</b>					<b>DATE</b> February 2003	
<b>BUDGET ACTIVITY</b>			<b>PE NUMBER AND TITLE</b>			<b>PROJECT</b>
<b>07 - Operational System Development</b>			<b>0207601F USAF Modeling and Simulation</b>			<b>1008</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
				<u>Budget to</u>		<u>Total</u>
				<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development			32,687	16,312	12,583	0
Subtotal Support and Management			31,063	2,607	2,258	0
Subtotal Test and Evaluation						0
Total Project			63,750	18,919	14,841	0
						97,510

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

DATE  
**February 2003**

BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>						PROJECT <b>4567</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
4567	Joint Modeling and Simulation System (JMASS)	6,832	6,245	6,164	5,257	5,329	5,419	6,970	7,109	Continuing	TBD

(U) **A. Mission Description**

The Joint Modeling & Simulation System (JMASS) is a simulation support environment for the development, configuration, execution, and analysis of high fidelity, repeatable simulations with re-usable models-focus is tactical/engagement level simulations with the present concentration on electronic combat. JMASS is a full system software implementation of a modern object based simulation architecture. JMASS provides users with the tools to: Develop objects, assemble these objects into models, configure the models in a complete simulation, execute the simulation, and post process the simulation data. JMASS tools assist users in developing fully compliant objects; users concentrate on the models and analysis, not computer science. JMASS will conduct concept exploration of the Joint Synthetic Battlespace - AF (JSB-AF) to expand the use of models and simulations across multiple user communities to include Distributed Mission Operations (DMO).

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

- (U) \$0 Accomplishments/Planned Program
- (U) \$4,732 Continued JMASS Legacy Model Transition and Development
- (U) \$2,100 Continued Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
- (U) \$6,832 Total

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

- (U) \$0 Accomplishment/Planned Program
- (U) \$4,145 Continued JMASS Legacy Model Transition and Development
- (U) \$2,100 Continued Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
- (U) \$6,245 Total

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

- (U) \$0 Accomplishment/Planned Program
- (U) \$3,314 Continue JMASS and Training Toolkit Legacy Model Transition and Development
- (U) \$350 Continue Joint JMASS Architecture development (Environment, Terrain, Human interaction, background models and simulations)
- (U) \$2,500 JSB-AF Concept Exploration
- (U) \$6,164 Total

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>					<b>0207601F USAF Modeling and Simulation</b>					<b>4567</b>	
(U) <b><u>B. Project Change Summary</u></b>											
Not applicable.											
(U) <b><u>C. Other Program Funding Summary (\$ in Thousands)</u></b>											
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E									Continuing		Continuing
(U) Other APPN											
(U) <b><u>D. Acquisition Strategy</u></b>											
All major contracts for JMASS model development will be awarded after full and open competition.											
(U) <b><u>E. Schedule Profile</u></b>											
				<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>	
				1	2	3	4	1	2	3	4
(U) Initial Delivery Completed											
(U) IOC Block I					*						
(U) IOC Block II							X				
(U) Implement JMASS Architecture at test facilities									X	X	X
(U) Develop/Extend enhanced AF system models									X	X	X
(U) JSB-AF Concept Exploration									X		X



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 4567		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	JMASS: Software Development/Interface Standards Development					6,682		6,095		6,014
(U)	JMASS: Travel					150		150		150
(U)	Total					6,832		6,245		6,164
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Various	Various	N/A	N/A	N/A		6,832	6,245	6,164	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>						6,832	6,245	6,164	TBD	TBD
Subtotal Product Development										
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						6,832	6,245	6,164	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)									DATE February 2003		
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation					PROJECT 5004	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5004	Joint Model Transition (JMT)	392	400	403	412	410	414	0	0	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>            Numous models are being developed for a broad range of areas including acquisition, analysis, test and evaluation, and training. The Joint Model Transition (JMT) project (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.</p> <p>Digital System Models (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.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Program            (U) \$156 Develop and integrate service analysis models into next generation joint models.            (U) \$154 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).            (U) \$82 Develop comprehensive Digital System Models (DSMs) to support Analysis of Alternatives (AoAs) for potential development programs.            (U) \$392 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Program            (U) \$100 Develop and integrate service models according to M&amp;S architecture roadmap.            (U) \$218 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).            (U) \$82 Develop comprehensive Digital System Models (DSMs) and Simulations to support potential development programs.            (U) \$400 Total</p>											
Project 5004			Page 11 of 19 Pages				Exhibit R-2A (PE 0207601F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0207601F USAF Modeling and Simulation</b>					<b>5004</b>			
<b>(U) A. Mission Description Continued</b>													
(U) <u>FY 2004 (\$ in Thousands)</u>													
(U) \$0 Accomplishments/Planned Program													
(U) \$100 Develop and integrate service models according to M&S architecture roadmap.													
(U) \$218 Requirements/cost-benefit analysis for Next Generation Mission Model (NGMM).													
(U) \$85 Develop comprehensive Digital System Models (DSMs) and Simulations to support potential development programs.													
(U) \$403 Total													
<b>(U) B. Project Change Summary</b>													
Not applicable.													
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E									Continuing				
(U) Other APPN													
<b>(U) D. Acquisition Strategy</b>													
The funds are provided to the Office of Aerospace Studies (OAS) and various vendors for the advancement and capability extension of Digital System Models (DSMs) and Simulations.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>			<u>FY 2004</u>				
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Joint Accreditation Support Activity (Phase 1)		*											
(U) Joint Accreditation Support Activity (Phase 2)				*									
(U) Develop Digital System Models (DSMs)					*				X				X
(U) Develop Next Generation Joint Models					*								
(U) Develop/Extend Enhance AF Models					*			X				X	
(U) Develop/Implement M&S Architecture							X				X		
Project 5004													
Page 12 of 19 Pages													
Exhibit R-2A (PE 0207601F)													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207601F USAF Modeling and Simulation			PROJECT 5004		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Contractor Support					313		314		313
(U)	Program Management Suppor					32		35		38
(U)	Travel					47		51		52
(U)	Total					392		400		403
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Various	Various	Various	N/A	N/A		392	400	403	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development						392	400	403	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project						392	400	403	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>					PROJECT <b>5005</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5005	Executive Agent For Air /Space Natural Environment	821	910	918	938	956	975	0	0	Continuing	TBD
<p>(U) <b><u>A. Mission Description</u></b>            Air Force Director of Weather (AF/XIW) 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.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Program            (U) \$135 Continued Space Weather Prototyping and Integration            (U) \$527 Continued Production Center Integration            (U) \$159 Continued Air/Land Battlefield Integration            (U) \$821 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Program            (U) \$0 Continued Develop/Extend Enhance AF Analytical Models            (U) \$350 Continued Space Weather Prototyping and Integration            (U) \$350 Continued Production Center Integration            (U) \$210 Continued Air/Land Battlefield Integration            (U) \$910 Total</p> <p>(U) <b><u>FY 2004 (\$ in Thousands)</u></b>            (U) \$0 Accomplishments/Planned Program            (U) \$365 Continue Space Weather Prototyping and Integration            (U) \$343 Continue Production Center Integration            (U) \$210 Continue Air/Land Battlefield Integration</p>											
Project 5005		Page 14 of 19 Pages					Exhibit R-2A (PE 0207601F)				

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
<b>07 - Operational System Development</b>					<b>0207601F USAF Modeling and Simulation</b>					<b>5005</b>			
<b>(U) A. Mission Description Continued</b>													
<b>(U) FY 2004 (\$ in Thousands) Continued</b>													
<b>(U) \$918 Total</b>													
<b>(U) B. Project Change Summary</b>													
Not applicable.													
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
<b>(U) AF RDT&amp;E</b>									Continuing				
<b>(U) Other APPN</b>													
<b>(U) D. Acquisition Strategy</b>													
All major contracts under ASNE will be awarded after full and open competition.													
<b>(U) E. Schedule Profile</b>													
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
<b>(U) ESG IOC</b>		*											
<b>(U) Weather Scenario Production IOC</b>		*							X				
<b>(U) Warfighter Weather Effects IOC</b>				*									
<b>(U) Weather Scenario Production FOC</b>									X				
<b>(U) Space Environmental Effects IOC</b>				*							X		
<b>(U) Ionospheric Effects FOC</b>						X							
* - Completed													
X - Event													
Project 5005													
Page 15 of 19 Pages													
Exhibit R-2A (PE 0207601F)													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207601F USAF Modeling and Simulation</b>			<b>5005</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Software Development				416		464			467
(U)	Lab Overhead/Management				90		120			125
(U)	Prototyping				290		296			291
(U)	Travel				25		30			35
(U)	Total				821		910			918
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Various	Various	Various			821	910	918		Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development					821	910	918	TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project					821	910	918	TBD	TBD

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>	PROJECT <b>5122</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5122 C4ISR Warfighting Integration	0	0	998	1,970	1,951	1,948	1,939	1,929	0	0

(U) **A. Mission Description**  
 Oversee the development and integration of next generation M&S technologies supporting the accurate portrayal of C4ISR assets at USAF Wargaming and Simulation Centers. Conduct technical alignments and assessments of acquisition programs to ensure programs are accurately modeling C4ISR assets and their impact on the joint battlespace. Manage development of future C4ISR M&S roadmaps and sequencing plans to ensure programs are fully interoperable and integrate into a common Joint Synthetic Battlespace-AF (JSB-AF).

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

(U) **FY 2003 (\$ in Thousands)**  
 (U) \$0 Accomplishments/Planned Activity  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2004 (\$ in Thousands)**  
 (U) \$0 Accomplishments/Planned Activity  
 (U) \$998 C4ISR Warfighter Integration  
 (U) \$998 Total

(U) **B. Project Change Summary**  
 Not applicable.



<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2003</b>				
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0207601F USAF Modeling and Simulation</b>			PROJECT <b>5122</b>			
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>											
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
<b>(U) AF RDT&amp;E</b>											
<b>(U) Other APPN</b>											
<b>(U) D. Acquisition Strategy</b>											
All major contracts under C4ISR Warfighting Integration will be awarded after full and open competition.											
<b>(U) E. Schedule Profile</b>											
				<u>FY 2002</u>			<u>FY 2003</u>		<u>FY 2004</u>		
				1	2	3	4	1	2	3	4
<b>(U) Integrate Core Structure - requirements development</b>											
									X		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207601F USAF Modeling and Simulation</b>			<b>5122</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Software Development					0		0		768
(U)	Contractor Support									157
(U)	Program Management Support									73
(U)	Total					0		0		998
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	Det 4, AFC2TIG	1 Jan 90	N/A	N/A	0	0	0	998	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>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>
	<u>Subtotals</u>					0	0	0	998	TBD
	Subtotal Product Development					0	0	0	998	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project					0	0	0	998	TBD

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

DATE  
**February 2003**

BUDGET ACTIVITY		PE NUMBER AND TITLE								
<b>07 - Operational System Development</b>		<b>0207605F Wargaming and Simulation Centers</b>								
COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7,582	8,323	6,262	8,358	8,399	8,506	8,677	8,758	Continuing	TBD
2888 Theater Air Command & Control Sim Facility (TACCSF)	7,582	8,323	5,282	6,394	6,453	6,564	6,743	6,835	Continuing	TBD
5087 C4ISR Warfighting Integration	0	0	980	1,964	1,946	1,942	1,934	1,923	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

Theater Air Command & Control Simulation Facility (TACCSF) and C4ISR Warfighting Integration effectively model the integration of aerospace C4ISR capabilities in the development of Modelling & Simulation (M&S) tools required to support training, experimentation, and analysis events.

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

These programs are in budget activity 7 - Operations System Development, because they continue the development and upgrades of the Air Force's premier warfighter-in-the-loop simulation facility.

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	5,033	5,278	6,262	TBD
(U) Appropriated Value	8,033	8,478		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-72	-103		
b. Small Business Innovative Research	-219			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-123	-52		
e. Rescissions	-37			
(U) Adjustments to Budget Years Since FY 2003 PBR				

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

DATE

**February 2003**

BUDGET ACTIVITY

PE NUMBER AND TITLE

**07 - Operational System Development**

**0207605F Wargaming and Simulation Centers**

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Current Budget Submit/FY 2004 PBR	7,582	8,323	6,262	TBD
(U) <u>Significant Program Changes:</u> None.				

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0207605F Wargaming and Simulation Centers</b>						<b>PROJECT</b> <b>2888</b>	
<b>COST (\$ in Thousands)</b>		<b>FY 2002 Actual</b>	<b>FY 2003 Estimate</b>	<b>FY 2004 Estimate</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>FY 2008 Estimate</b>	<b>FY 2009 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>
2888	Theater Air Command & Control Sim Facility (TACCSF)	7,582	8,323	5,282	6,394	6,453	6,564	6,743	6,835	Continuing	TBD

**(U) A. Mission Description**

The Theater Aerospace Command and Control Simulation Facility (TACCSF) develops and maintains a persistent tactical-level Joint Synthetic Battlespace (JSB) for training, mission rehearsal, testing and evaluation, range integration, experimentation and decision support for the Combat Aerospace Forces (CAF).

As the AF's Distributed Mission Operations Center (DMOC), TACCSF is responsible for integrating DMO events, scenarios, and databases. In partnership with ESC, TACCSF develops or acquires technologies that permit the effective integration of, and scheduling for, resources that comprise the synthetic battlespace. These include, but are not limited to, high-fidelity aircraft simulators and sensors, realistic threat replications, detailed weapons and weather models, and data/voice connectivity to distributed resources. TACCSF develops and archives realistic theater level scenarios, and makes them available to all DoD organizations. TACCSF is the lead agent for developing ACC inter-team Distributed Mission Training (DMT) into the over-arching inter-team DMO exercises or mission rehearsals. TACCSF hosts a cadre of white force controllers trained in both friendly and adversary tactics, and makes their services available to other organizations. TACCSF links the tactical-level JSB to operational and strategic-level simulations to explore and exercise the full spectrum of conflict. TACCSF makes its JSB available to other commands, services, and nations seeking to improve programs or processes through the use of synthetic means.

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

- (U) \$0** Accomplishments/Planned Program
- (U) \$6,723** Continued to maintain core structure to support users conducting RDT&E, mission rehearsal, and concepts of operation development.
- (U) \$500** Continued to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&A of core systems.
- (U) \$259** Provided program management.
- (U) \$100** Continue communications connectivity between TACCSF and various other M&S facilities.
- (U) \$7,582** Total

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2003</b>																																												
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0207605F Wargaming and Simulation Centers</b>		PROJECT <b>2888</b>																																													
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$7,289 Continued to maintain core structure to support users conducting RDT&amp;E, mission rehearsal, and concepts of operation development.</p> <p>(U) \$675 Continued to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&amp;A of core systems.</p> <p>(U) \$259 Provided program management.</p> <p>(U) \$100 Continued communications connectivity between TACCSF and various other M&amp;S facilities.</p> <p>(U) \$8,323 Total</p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$4,146 Continue to maintain core structure to support users conducting RDT&amp;E, mission rehearsal, and concepts of operation development.</p> <p>(U) \$675 Continue to support requirements definition, test support, scenario development, analysis, system engineering support, and VV&amp;A of core systems.</p> <p>(U) \$259 Provides program management.</p> <p>(U) \$202 Continue and expand communications connectivity between TACCSF and other M&amp;S facilities.</p> <p>(U) \$5,282 Total</p> <p>(U) <b><u>B. Project Change Summary</u></b></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 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>FY 2008</u></th> <th style="width:10%;"><u>FY 2009</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td><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>Estimate</u></td> <td><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> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <b><u>D. Acquisition Strategy</u></b>          Provides funds for development and upgrade of virtual simulators. Simulators include: Airborne Warning and Control Systems (AWACS), Joint Surveillance Attack Radar Systems (JSTARS), Advanced Airborne Sensor, Airborne Laser (ABL), TSQ-73 Fire Direction Center, Unmanned Aerial vehicles, and the F-15C.</p>									<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E											(U) Other APPN										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>																																									
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(U) AF RDT&E																																																			
(U) Other APPN																																																			
Project 2888		Page 4 of 9 Pages				Exhibit R-2A (PE 0207605F)																																													

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0207605F Wargaming and Simulation Centers</b>					<b>2888</b>		
<b>(U) E. Schedule Profile</b>												
		<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Develop Core Structure	*				*				X			
(U) Develop Joint Synthetic Battlespace (JSB)								X				X
(U) Integrate new AWACS & MCE & test		*										
(U) Distributed Training / Integration (Desert Pivots / Blue Flags)				*	*	X	X	X	X	X	X	X



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0207605F Wargaming and Simulation Centers			PROJECT 2888		
(U) <b>A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Software Development					5,732		7,232		4,080
(U)	Contractor Support					1,500		741		852
(U)	Program Management Support					350		350		350
(U)	Total					7,582		8,323		5,282
(U) <b>B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
(U) <b>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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
		1 Jan 90	Continuing	Continuing	5,272	7,582	8,323	5,282	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior to FY 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					5,272	7,582	8,323	5,282	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					5,272	7,582	8,323	5,282	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>	DATE <b>February 2003</b>
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BUDGET ACTIVITY <b>07 - Operational System Development</b>	PE NUMBER AND TITLE <b>0207605F Wargaming and Simulation Centers</b>	PROJECT <b>5087</b>
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COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
5087 C4ISR Warfighting Integration	0	0	980	1,964	1,946	1,942	1,934	1,923	Continuing	TBD

(U) **A. Mission Description**  
 Oversee the development and integration of Modelling & Simulation (M&S) technologies supporting the accurate portrayal of C4ISR assets at USAF Wargaming and Simulation Centers. Conduct technical alignments and assessments of acquisition programs to ensure programs are accurately modeling C4ISR assets and their impact on the joint battlespace. Manage development of future C4ISR M&S roadmaps and sequencing plans to ensure programs are fully interoperable and integrate into a common Joint Synthetic Battlespace-AF (JSB-AF).

(U) **FY 2002 (\$ in Thousands)**  
 (U) \$0 Accomplishments/Planned Program  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**  
 (U) \$0 Accomplishments/Planned Program  
 (U) \$0 No Activity  
 (U) \$0 Total

(U) **FY 2004 (\$ in Thousands)**  
 (U) \$0 Accomplishments/Planned Program  
 (U) \$980 C4ISR Warfighter Integration  
 (U) \$980 Total

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

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

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2003																																					
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																					
<b>07 - Operational System Development</b>					<b>0207605F Wargaming and Simulation Centers</b>					<b>5087</b>																																					
<p>(U) <b><u>D. Acquisition Strategy</u></b>                      All major contracts under C4ISR Warfighting Integration will be 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: 35%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> <th colspan="3" style="text-align: center;"><u>FY 2004</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Integrate Core Structure - requirements 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> </tbody> </table>													<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Integrate Core Structure - requirements development											X	
	<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>																																								
	1	2	3	4	1	2	3	4	1	2	3	4																																			
(U) Integrate Core Structure - requirements development											X																																				
Project 5087			Page 8 of 9 Pages				Exhibit R-2A (PE 0207605F)																																								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
<b>07 - Operational System Development</b>					<b>0207605F Wargaming and Simulation Centers</b>			<b>5087</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Software Development				0		0			750
(U)	Contractor Support						0			157
(U)	Program Management Support						0			73
(U)	Total				0		0			980
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
TBD		TBD	Continuing	Continuing	0	0	0	980	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
	Subtotal Product Development				0	0	0	980	TBD	TBD
	Subtotal Support and Management									
	Subtotal Test and Evaluation									
	Total Project				0	0	0	980	TBD	TBD

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

DATE  
**February 2003**

<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0208006F Mission Planning Systems</b>						<b>PROJECT</b> <b>3858</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3858	Air Force Mission Support System (AFMSS)	17,300	16,540	62,348	144,059	144,544	247,154	98,609	96,164	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

**(U) A. Mission Description**

The Mission Planning System program was established in 1990 to consolidate mission planning system development efforts into a single unit-level mission planning system. This program maintains and preserves combat capability on existing legacy planning systems while migrating into a USAF wide standard mission planning system known as the Air Force Mission Support System (AFMSS). Integrating military and commercial software on Commercial-Off-The-Shelf (COTS) hardware, AFMSS encompasses evolutionary software and hardware development in an open systems architecture to include taking advantage of the rapid growth of personal computer (PC) technology on increasingly smaller and more mission-oriented devices. AFMSS looks to integrate mission planning with other systems. AFMSS today consists of the Mission Planning System (MPS), a UNIX-based system; the Portable Flight Planning Software (PFPS), a PC-based system; and the Joint Mission Planning System (JMPS), which is the next evolution of the PC-based system.

The MPS provides comprehensive mission planning tools to conduct missions ranging from day-to-day training, peace time operations/exercises to complex operations supporting conventional and nuclear armed conflict. The MPS currently or will support the following aircraft and associated weapons: B-1, B-2, B-52, F-15, F-16, F-117, F/A-22, U-2, AGM-130, AGM-142, JDAM, JSOW, WCMD, JASSM, MALD, and Global Hawk. Platforms use tailored software called Aircraft/Weapon/Electronics (A/W/E) that integrate with the MPS core software to specialize the software for their mission.

The PFPS provides flight planning tools that support day-to-day training, peace time operations/exercises, and conventional armed conflict. The PFPS design is based on single user PCs using Windows as its interface. The PFPS currently or will support the following aircraft: F-16, MC-130, EC-130, HC-130H/N/P, AC-130, E-3, E-8, C-130E/H/J, LC-130, WC-130, C-27, C-17, E-4, T-38, C-141, RC-135, KC-10, KC-135R/E, C-5, C-9, A-10, ABL, UH-1, MH-53, MH-47, AH/MH-6J, MH/HH-60, and Predator.

The JMPS is a continuation effort to move the AFMSS MPS and PFPS and the Navy's Tactical Automated Mission Planning System (TAMPS) to the Global Command and Control System (GCCS). The JMPS will provide a mission planning system that is scaleable, extensible, and configurable to meet the full range of mission planning needs from basic flight planning to planning precision guided munitions on low observable aircraft. The JMPS design uses an open architecture allowing a plug-and-play approach for additional capabilities to be added to the system. Additional capabilities will be developed that meet requirements common to multiple aircraft. Requirements unique to an aircraft will be developed in its JMPS A/W/E. Beginning in FY04, total responsibility for JMPS A/W/E development for all legacy

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2003
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>07 - Operational System Development</b>	<b>0208006F Mission Planning Systems</b>	<b>3858</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            aircraft programs will be consolidated in the AFMSS program. The AFMSS SPO will contract for the systems engineering and integration support for JMPS, additional capabilities, and A/W/Es. The JMPS will meet interoperability requirements through compliance with the Defense Information Infrastructure and Common Operating Environment (DII/COE). The JMPS will support all Air Force/Navy/Army weapons and aircraft to include emerging systems such as JSF and UCAV.</p>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$344	Continued Aircraft Weapons and Electronics (A/W/E) development/support/integration for the platforms listed above	
(U) \$6,158	Continued AFMSS development effort (including but not limited to JMPS development and MPS enhancements)	
(U) \$8,283	Continued AFMSS (PC-based) Combat Capabilities, which could include but is not limited to Global Positioning System (GPS) crypto key, Global Air Traffic Management (GATM), Precision Guided Munition (PGM) migration	
(U) \$1,015	Continued Responsible Test Organization (RTO) support	
(U) \$1,500	Development/integration of Powerscene (Mission Rehearsal) into the Air Force Mission Support System (Congressional add)	
(U) \$17,300	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$351	Continue Aircraft Weapons and Electronics development/support/integration for the platforms listed above	
(U) \$5,929	Continue AFMSS development effort (including but not limited to JMPS development and MPS enhancements)	
(U) \$9,220	Continue AFMSS (PC-based) Combat Capabilities, which could include but is not limited to GPS crypto key, GATM, PGM migration, Conventional Weapons Planning, Automated Target Data Transfer, Airdrop Planning, Auto Routing, Low Observable Planning, Computer Based Training (CBT), Single Integrated Operational Plan (SIOP), Vertical Profile, Weather Planning, Sensor Prediction, Mission Rehearsal, Web Browsing, Electronic Warfare (EW) Planning, and System Security	
(U) \$1,040	Continue RTO support	
(U) \$16,540	Total	
(U) <u>FY 2004 (\$ in Thousands)</u>		
(U) \$0	Accomplishments/Planned Programs	
(U) \$30,722	Continue Aircraft Weapons and Electronics (A/W/E) development/support/integration for the platforms listed above to include all A/W/Es required for JMPS. Specific effort for FY04 includes but is not limited to A/W/E for the F-15, F-16, F-22, A-10, and JASSM	
(U) \$10,617	Continue AFMSS development effort (including but not limited to JMPS development and MPS enhancements)	
(U) \$19,409	Continue AFMSS (PC-based) Combat Capabilities, which could include but is not limited to GPS crypto key, GATM, PGM migration,	
Project 3858	Page 2 of 8 Pages	Exhibit R-2 (PE 0208006F)

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																																																							
<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0208006F Mission Planning Systems</b>	<b>PROJECT</b> <b>3858</b>																																																							
<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2004 (\$ in Thousands) Continued</u></b></p> <p style="padding-left: 40px;">Conventional Weapons Planning, Automated Target Data Transfer, Airdrop Planning, Auto Routing, Low Observable Planning, Computer Based Training (CBT), Single Integrated Operational Plan (SIOP), Vertical Profile, Weather Planning, Sensor Prediction, Mission Rehearsal, Web Browsing, Electronic Warfare (EW) Planning, and System Security</p> <p>(U) \$1,600 Continue RTO support</p> <p>(U) \$62,348 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>Mission Planning Systems is in budget activity 7, Operational System Development, because the program currently supports deployed AFMSS systems, which include transportable, non-deployable, and portable laptop workstations. AFMSS MPS C2.0, C2.1, C2.2, C2.2c and PFPS 3.0, 3.1, 3.2 are operationally fielded to the Combat Air Forces. PFPS 3.3 (SOF only) and 3.4 updates will be released in FY03. MPS C2.2d was delivered in FY02. JMPS v1.0 began development in Jun 99. The first five of six JMPS Beta releases have been completed and are being evaluated by the Air Force. JMPS v1.0 will be delivered in Mar/Apr 03. Development of four JMPS combat capabilities began in FY02 and continues in FY03. Two additional combat capabilities will begin development in FY03. Many more will begin development in FY04. Two JMPS A/W/E developments will begin in FY03 and three more JMPS A/W/Es will start in FY04.</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: right;"><u>FY 2002</u></th> <th style="width: 10%; text-align: right;"><u>FY 2003</u></th> <th style="width: 10%; text-align: right;"><u>FY 2004</u></th> <th style="width: 10%; text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">17,887</td> <td style="text-align: right;">17,002</td> <td style="text-align: right;">73,841</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">18,404</td> <td style="text-align: right;">17,002</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;">-305</td> <td style="text-align: right;">-114</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-337</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td style="text-align: right;">-168</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td style="text-align: right;">-462</td> <td style="text-align: right;">-180</td> <td style="text-align: right;">-11,493</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: right;">17,300</td> <td style="text-align: right;">16,540</td> <td style="text-align: right;">62,348</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <b><u>Significant Program Changes:</u></b> Beginning in FY04, total responsibility for JMPS A/W/E development for all legacy aircraft programs will be consolidated in the AFMSS program.</p>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	17,887	17,002	73,841	TBD	(U) Appropriated Value	18,404	17,002			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-305	-114			b. Small Business Innovative Research	-337				c. Omnibus or Other Above Threshold Reprogram		-168			d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2003 PBR	-462	-180	-11,493		(U) Current Budget Submit/FY 2004 PBR	17,300	16,540	62,348	TBD
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE	
									February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT	
<b>07 - Operational System Development</b>				<b>0208006F Mission Planning Systems</b>					<b>3858</b>	
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other Procurement, AF WSC 833040, Theater Air Control System Improvement (TACSI)	8,898	13,310	10,862	13,999	14,878	15,451	12,585	13,038	Continuing	TBD
(U) Other Procurement, AF, WSC 86190A, Initial Spares	787	746	514	366	0	0	0	0	Continuing	TBD
(U) Operations & Maintenance, AF, 0208006F	31,081	39,050	33,998	34,449	37,093	36,396	37,915	38,131	Continuing	TBD
<p>O&amp;M funds for PE 0208006F support the software and hardware maintenance costs of the Air Force Mission Support System (AFMSS) and the Common Mapping Production System. These funds also support the maintenance of the following existing operational systems until replaced by AFMSS: Mission Data Preparation System (MDPS) supports conventional and nuclear mission planning, aircraft/weapons avionics loading, compatibility between evolving B-52H avionics, its weapons systems, and USSTRATCOM. O&amp;M funding supported approximately 240 older systems in FY94. By FY03, a similar amount of funding supports over 2900 AFMSS mission planning systems world-wide.</p>										
<b>(U) E. Acquisition Strategy</b>										
<p>The Air Force Mission Support System (AFMSS) System Program Office (SPO) manages the AFMSS projects at Electronic Systems Center, Hanscom AFB, Massachusetts. The AFMSS acquisition strategy integrates military and commercial software hosted on commercial-off-the-shelf (COTS) hardware. AFMSS uses evolutionary software development and an open systems architecture. The contractors for the AFMSS projects are BAE Systems, Nashua, NH, for the MPS and C-17, KC-10, C-5, C-9, C-141, E-3, E-8, KC-135E/R A/W/Es; 46TS, Eglin AFB, FL, for the PFPS; and Northrop Grumman Information Technology (NGIT), San Pedro, CA for JMPS. Also, Oklahoma City Air Logistics Center (OC-ALC), Tinker AFB, OK; Warner Robins Air Logistics Center (WR-ALC), Robins AFB, GA; and Ogden Air Logistics Center (OO-ALC), Hill AFB, UT develop A/W/Es in-house.</p> <p>JMPS is following an evolutionary acquisition approach. Development began in FY99 and continues in the FY02-FY04 timeframe. The initial delivery of JMPS will occur in FY03. The Navy is evolving the initial delivery to add components needed to retire the Navy's UNIX-based Tactical Air Mission Planning System in FY04. The Air Force and Navy are further evolving JMPS by continuing to develop software components called combat capabilities. Combat capabilities plug into JMPS and meet the combat mission planning requirements of multiple Air Force, Navy, Marine Corps, and Army platforms. The SPO will tailor each combat capability acquisition to meet the joint requirements. Before a platform can migrate to JMPS, its required combat capabilities must be built along with the platform's unique A/W/E. Beginning in FY04, the AFMSS SPO picks up responsibility for and executes all legacy A/W/E development for JMPS. The combination of JMPS, required combat</p>										
Project 3858			Page 4 of 8 Pages				Exhibit R-2 (PE 0208006F)			

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<p>(U) <b><u>E. Acquisition Strategy Continued</u></b>                      capabilities, and platform A/W/E makes up a complete mission planning environment for a platform. The development and integration of JMPS, combat capabilities, and A/W/Es across multiple platforms requires a significant systems engineering, integration, and test effort. Consequently, in FY03 the SPO will competitively award a contract to perform systems engineering and support integration across all JMPS related development efforts.</p>																																																																																																																																																																																																																																																																																																			
<p>(U) <b><u>F. Schedule Profile</u></b></p> <table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4"><u>FY 2002</u></th> <th rowspan="2"></th> <th colspan="4"><u>FY 2003</u></th> <th rowspan="2"></th> <th colspan="4"><u>FY 2004</u></th> </tr> <tr> <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) PFPS 3.2 OT&amp;E</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) PFPS 3.3 OT&amp;E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PFPS 4.0 OT&amp;E</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> <td></td> </tr> <tr> <td>(U) MPS C2.2d Release</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) MPS C2.3 Release</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> <td></td> </tr> <tr> <td>(U) JMPS v1.0 Beta S/W Releases</td> <td></td> <td></td> <td></td> <td>*</td> <td>*</td> <td>*</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) JMPS v1.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PGM Migration Phase 1 Start/Complete</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> <td></td> </tr> <tr> <td>(U) Conventional Weapons Planning Start/Complete</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> <td></td> </tr> <tr> <td>(U) Airdrop Planning Start/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></td> <td>X</td> </tr> <tr> <td>(U) Integration and Engineering Support Contract Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) F-15 A-D, E A/W/E Start</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> <td></td> </tr> <tr> <td>(U) F-16 Blk 30/40/50 A/W/E Start</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> <td></td> </tr> <tr> <td>(U) A-10 A/W/E Start</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> <td></td> </tr> <tr> <td>(U) F-22 A/W/E Start</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> <td></td> </tr> <tr> <td>(U) JASSM A/W/E Start</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> <td></td> </tr> <tr> <td>(U) Access Target Information Start/Complete</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>(U) Vertical Profile Start/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></td> <td>X</td> </tr> </tbody> </table> <p>* denotes completed event                      X denotes planned event</p>														<u>FY 2002</u>					<u>FY 2003</u>					<u>FY 2004</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) PFPS 3.2 OT&E				*										(U) PFPS 3.3 OT&E								X						(U) PFPS 4.0 OT&E										X				(U) MPS C2.2d Release				*										(U) MPS C2.3 Release												X		(U) JMPS v1.0 Beta S/W Releases				*	*	*	X							(U) JMPS v1.0								X						(U) PGM Migration Phase 1 Start/Complete				*					X					(U) Conventional Weapons Planning Start/Complete				*						X				(U) Airdrop Planning Start/Complete				*									X	(U) Integration and Engineering Support Contract Award								X						(U) F-15 A-D, E A/W/E Start										X				(U) F-16 Blk 30/40/50 A/W/E Start										X				(U) A-10 A/W/E Start										X				(U) F-22 A/W/E Start										X				(U) JASSM A/W/E Start										X				(U) Access Target Information Start/Complete								X					X	(U) Vertical Profile Start/Complete				*									X
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0208006F Mission Planning Systems			PROJECT 3858		
(U) <b><u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
					<u>FY 2002</u>		<u>FY 2003</u>			<u>FY 2004</u>
(U)	Primary Software Development				10,758		9,754			25,225
(U)	Aircraft/Weapons/Electronics (A/W/E) Development, Support, and Integration				344		351			25,469
(U)	Systems Engineering				3,513		3,778			5,154
(U)	Program Management				1,570		1,517			4,800
(U)	Test and Evaluation				1,015		1,040			1,600
(U)	Miscellaneous				100		100			100
(U)	Total				17,300		16,540			62,348
(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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Northrop Grumman	CPIF	Jun 99	TBD	TBD	23,482	3,961	1,340	0	Continuing	TBD
Information Technology (NGIT, formerly Logicon) (JMPS)										
BAE Systems (formerly Sanders)	CPAF	Dec 92	TBD	TBD	93,300	0	0	0	Continuing	TBD
46TS Eglin AFB, FL	Project Order	Dec 98	TBD	TBD	3,055	25	25	0	Continuing	TBD
A/W/E Development and Integration Activity*	Various	Various	TBD	TBD	410	205	305	29,758	Continuing	TBD
(*Includes A/W/E development and integration required for platforms to migrate to JMPS)										
Project 3858					Page 6 of 8 Pages			Exhibit R-3 (PE 0208006F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										February 2003
07 - Operational System Development					PE NUMBER AND TITLE					PROJECT
					0208006F Mission Planning Systems					3858
<b>(U) Performing Organizations Continued:</b>										
<u>Product Development Organizations</u>										
SPO Misc* (*Prior year total includes past, inactive contracts)					18,299	2,113	2,144	4,238	Continuing	TBD
AFMSS Combat	Various	Various	TBD	TBD	1,905	4,648	6,416	16,798	Continuing	TBD
Capabilities* (*Parts of this effort may be rolled into the USN's NGIT (formerly Logicon) contract for JMPS shown above. Also includes FY02 development and integration of Powerscene)										
<u>Support and Management Organizations</u>										
FFRDC			TBD	TBD	23,278	3,788	3,778	5,154	Continuing	TBD
Miscellaneous			TBD	TBD	14,404	1,545	1,492	4,800	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46TW (Eglin AFB)	Project Order	Oct 98	TBD	TBD	2,430	1,015	1,040	1,600	Continuing	TBD
<b>(U) 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>Obligation</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
Project 3858					Page 7 of 8 Pages			Exhibit R-3 (PE 0208006F)		

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

DATE  
**February 2003**

BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT	
<b>07 - Operational System Development</b>	<b>0208006F Mission Planning Systems</b>				<b>3858</b>	
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	140,451	10,952	10,230	50,794	TBD	TBD
Subtotal Support and Management	37,682	5,333	5,270	9,954	TBD	TBD
Subtotal Test and Evaluation	2,430	1,015	1,040	1,600	TBD	TBD
Total Project	180,563	17,300	16,540	62,348	TBD	TBD

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>									DATE <b>February 2003</b>		
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0208021F Information Warfare Support</b>					PROJECT <b>0374</b>	
COST (\$ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
0374	Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt	1,667	7,625	12,091	12,249	12,241	11,854	11,951	12,056	Continuing	TBD
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0	0
<p>(U) <b><u>A. Mission Description</u></b></p> <p>Joint Expeditionary Force Exercise (JEFX) emphasizes Agile Combat Support, but exploration also occurs in managing intelligence, surveillance, and reconnaissance assets; global mobility; and dynamic battle control. JEFX and other Air Force funding was reprogrammed from existing command and control, global power, global reach, and space Program Elements.</p> <p>The Information Warfare Planning Capability (IWPC) was reprogrammed from other Information Warfare funding. The IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC operators will develop IW courses of action for the Joint Forces Air Component Commander (JFACC) and nominate IW 'targets' for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized List (JIPL).</p> <p>IO Technology Database (a.k.a. 'IO Technology Repository' and 'IO Technology Alliance') was directed to be transferred from PE 33140 to PE 28021 starting in FY 04 - FY 09 as part of the 12 Dec 02 Program Decision Memorandum (PDM). Refer to the RDOCs submission in PE 33140 for details of this program.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$0 IWPC Software Testing</p> <p>(U) \$1,667 IWPC Software Development</p> <p>(U) \$1,667 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Programs</p> <p>(U) \$4,054 IWPC Software Development</p> <p>(U) \$630 IWPC Software Testing</p> <p>(U) \$2,941 JEFX System integration</p> <p>(U) \$7,625 Total</p>											
Project 0374		Page 1 of 5 Pages					Exhibit R-2 (PE 0208021F)				

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2003</b>																																																																			
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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2004 (\$ in Thousands)</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">(U) \$0</td> <td>Accomplishments/Planned Programs</td> </tr> <tr> <td>(U) \$3,378</td> <td>IWPC Software Development</td> </tr> <tr> <td>(U) \$720</td> <td>IWPC Software Testing</td> </tr> <tr> <td>(U) \$2,993</td> <td>JEFX System Integration</td> </tr> <tr> <td>(U) \$5,000</td> <td>IO Technology Database</td> </tr> <tr> <td>(U) \$12,091</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>This program is in Budget Activity 7, Operational System Development, because it studies, develops and demonstrates IO prototypes to provide warning, self protection, and support to personnel and equipment against combat systems employed by enemy forces. It identifies existing military and commercial research and development efforts which can satisfy unfulfilled operational requirements as identified by the Unified Commands, and quickly bridge the gap between technology developments and meld the technology into the warfighter's operational requirements.</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 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1,676</td> <td style="text-align: center;">8,337</td> <td style="text-align: center;">7,813</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">1,667</td> <td style="text-align: center;">7,837</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 style="text-align: center;">-77</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;">-135</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2003 PBR</td> <td></td> <td></td> <td style="text-align: center;">4,278</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2004 PBR</td> <td style="text-align: center;">1,667</td> <td style="text-align: center;">7,625</td> <td style="text-align: center;">12,091</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p>			(U) \$0	Accomplishments/Planned Programs	(U) \$3,378	IWPC Software Development	(U) \$720	IWPC Software Testing	(U) \$2,993	JEFX System Integration	(U) \$5,000	IO Technology Database	(U) \$12,091	Total		<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,676	8,337	7,813		(U) Appropriated Value	1,667	7,837			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram		-77			d. Below Threshold Reprogram					e. Rescissions		-135			(U) Adjustments to Budget Years Since FY 2003 PBR			4,278		(U) Current Budget Submit/FY 2004 PBR	1,667	7,625	12,091	TBD
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Project 0374	Page 2 of 5 Pages	Exhibit R-2 (PE 0208021F)																																																																			

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>										DATE <b>February 2003</b>			
BUDGET ACTIVITY <b>07 - Operational System Development</b>					PE NUMBER AND TITLE <b>0208021F Information Warfare Support</b>					PROJECT <b>0374</b>			
<b>(U) D. Other Program Funding Summary (\$ in Thousands)</b>													
	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>			
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) AF RDT&E	0	0	0	0	0	0	0	0	Continuing		Continuing		
(U) Other APPN													
(U) Operations & Maintenance, AF (3400)	0	1,036	1,045	1,061	1,210	1,154	1,176	1,198	Continuing				
<b>(U) E. Acquisition Strategy</b>													
All major contracts within this Program were awarded after full and open competition.													
Electronic Systems Center (ESC), Hanscom AFB, MA will manage the acquisition and development for evolving suite of interoperable IW planning and decision support capabilities comprised of, as required, software, hardware, and communications products. ESC will identify and implement an open, scalable system architecture that will accommodate growth in functionality; allow functional modules to interact, achieve early data sharing capability with TBMCS, with the goal of interoperability as security policy permits; and be compliant with evolving GCCS and DII COE standards. An IWPC spiral will be released once a year. Requirements for the next spiral will be developed by the IWPC Spiral Development Integrated Process Team (IWPC SD IPT), chaired by ACC. Spirals within the acquisition cycle allow deficiencies to be identified and considered for future spirals as well as the next experiment or applied to current capabilities. Integration efforts will capitalize on the synergy between evolving technologies and on-going system program modifications to maximize the return on investment.													
<b>(U) F. Schedule Profile</b>													
		<u>FY 2002</u>			<u>FY 2003</u>			<u>FY 2004</u>					
		1	2	3	4	1	2	3	4	1	2	3	4
(U) JEFX					*								X
(U) IWPC Contract Award		*				*							
(U) IWPC Software Development		*				*							
(U) IWPC Software Integration Testing		*					X				X		
(U) IWPC Software Release					*		X		X				



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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2003				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
<b>07 - Operational System Development</b>					<b>0208021F Information Warfare Support</b>			<b>0374</b>			
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>											
					<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		
(U)	Various JEFX initiatives; systems arch; integration, comms						2,941		2,993		
(U)	IWPC VX.O Software Development				1,667		4,054		3,378		
(U)	Instrumentation and Support										
(U)	Facilities										
(U)	Testing						630		720		
(U)	Engineering Services										
(U)	Program Infrastructure										
(U)	SME										
(U)	IO Technology Database								5,000		
(U)	Total				1,667		7,625		12,091		
<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 2002</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget FY 2004</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	JEFX - Various	Various	Various	N/A	N/A		0	2,941	2,993	Continuing	TBD
	ARINC	DDForm 448	Oct	N/A	N/A		0			0	0
	General Dynamics	AF Form 9	Nov	2	91	1,667	4,054	3,378		Continuing	TBD
	MITRE	DDForm 448	Oct	N/A	N/A		0	0		Continuing	TBD
	*IO Tech Database - Refer to 33140 RDOCs								5,000	Continuing	TBD
<u>Support and Management Organizations</u>											
<u>Test and Evaluation Organizations</u>											
	605th Test Squadron						220	220		Continuing	TBD
	46th Test Squadron						410	500		Continuing	TBD
Project 0374					Page 4 of 5 Pages			Exhibit R-3 (PE 0208021F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2003					
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0208021F Information Warfare Support				PROJECT 0374	
<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 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					1,667	6,995	11,371	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation						630	720	TBD	TBD
Total Project					1,667	7,625	12,091	TBD	TBD

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