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

DATE: February 2003

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0305110F Satellite Control Network

PROJECT: 3276

COST ($ in Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
3276	Satellite Control Network	47,378	16,779	18,603	17,880	22,146	18,179	17,939	17,527	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

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

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

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

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

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(U) A. Mission Description Continued

Network (DISN) global grid, and provided an Asynchronous Transfer Mode (ATM) interface; and Operational Switch Replacement (OSR) to provide increased capacity, reliability, data quality, and user access. Additionally, efforts to standardize and improve both the Communications and Range segments of the AFSCN that include standards and protocols and external user communications connectivity upgrades continue on the Satellite Control Network Contract (SCNC), and are detailed below in the Range Upgrades segment.

RANGE UPGRADES: This effort will upgrade the current Automated Remote Tracking Station (ARTS) and other Range assets. Several integrated efforts, which are now grouped into the Remote Tracking Station (RTS) Block Change (RBC) effort, will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government unique equipment with commercial off-the-shelf technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs.

NETWORK OPERATIONS UPGRADES: These upgrades that include resource scheduling and orbit analysis system follow-on will build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem deliveries to continue and improve AFSCN resource management capabilities.

(U) FY 2002 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$9,295	Communications Upgrades: continued communications upgrades to include completion of OSR and WANIU development efforts.
(U)	$15,000	Range Upgrades: continued standards protocol development effort. Continued RTS Block Change development effort and system engineering and network integration
(U)	$8,293	Network Operations Upgrades: continued upgrades to network operations to include development of Orbit Analysis Subsystem follow-on upgrade and system engineering and network integration.
(U)	$100	Network Integration and Systems Engineering: continued system engineering and predeployment integration and validation of hardware/software to meet evolving satellite program requirements at Operational Control Nodes and RTSs.
(U)	$10,166	Provided program support for Systems Program Office.
(U)	$4,524	Reprogramming for higher AF priorities
(U)	$47,378	Total

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(U) A. Mission Description Continued

(U) FY 2003 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$10,321	Range Upgrades: continue upgrades to include development of standards and protocols/Wide Area Network server/security, interoperability, and RTS Block Change efforts. Continue predeployment system engineering and network integration.
(U)	$2,920	Network Operations Upgrades: continue upgrades to network operations to include development of Orbit Analysis Subsystem follow-on upgrade and predeployment system engineering and network integration.
(U)	$3,538	Provide program support for Systems Program Office
(U)	$16,779	Total

(U) FY 2004 ($ in Thousands)

(U)	$0	Accomplishments/Planned Program
(U)	$9,741	Range Upgrades: continue upgrades to include development of standards and protocols/WAN serv/security, interoperability, and RTS Block Change efforts. Continue predeployment system engineering and network integration.
(U)	$5,155	Network Operations Upgrades: continue upgrades to network operations to include development of Resource Scheduling Capacity upgrade, Orbit Analysis Subsystem follow-on, and predeployment system engineering and network integration.
(U)	$3,707	Provide program support for Systems Program Office.
(U)	$18,603	Total

(U) B. Budget Activity Justification

This effort is in Budget Activity 7, Operational System Development, because it supports a fielded system.

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

		FY 2002	FY 2003	FY 2004	Total Cost
(U)	Previous President's Budget	54,539	17,542	19,845	TBD
(U)	Appropriated Value	56,349	17,542		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-1,810	-685		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram	-3,000	-78		
	d. Below Threshold Reprogram	-3,934			

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

		FY 2002	FY 2003	FY 2004	Total Cost
	e. Rescissions	-227			
(U)	Adjustments to Budget Years Since FY 2003 PBR			-1,242	
(U)	Current Budget Submit/FY 2004 PBR	47,378	16,779	18,603	TBD

(U) Significant Program Changes:

FY02: Network Integration Contract reduced effort as Satellite Control Network Contract (SCNC) came on line, and Operational Switch Replacement integration at sites was slower than forecast due to operational realities, so available funds were applied to higher AF priorities with acceptable levels of increased risk (-$4,524K additional reprogramming not reflected in database total above); SCNC winning contractor's approach refined alignment of funds between Remote Tracking Station Block Change (RBC) and Orbit Analysis System (OAS) upgrade.

FY04: FFRDC/SETA Systems Engineering support for upgrade efforts reduced to support higher Air Force priorities; inflation adjustment.

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

		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
(U)	OPAF, Electronics & Telecom Equipment (BA 03, PE 0305110F, P-64)	28,336	44,627	48,229	44,112	51,574	50,483	55,515	59,796	Continuing	TBD
(U)	OPAF, Initial Spares & Repair Parts (BA 05 PE 0305110F, P-106)	1,518	2,026	4,444	3,184	3,428	3,498	0	0	0	18,098

(U) E. Acquisition Strategy

The primary objective of the AFSCN I&M program is to reduce the cost of satellite control operations while maintaining or improving reliability, maintainability, operability, and capability of current systems. In Dec 01 the AF further streamlined its acquisition strategy by competitive award of the Satellite Control Network Contract (SCNC), which consolidates development upgrades, sustainment, system engineering, and integration responsibilities in one contract.

(U) F. Schedule Profile

FY 2002	FY 2003	FY 2004

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(U) F. Schedule Profile Continued

		FY 2002				FY 2003				FY 2004			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	COMMUNICATIONS UPGRADES												
(U)	- WANIU DD-250		*										
(U)	- OSR DD-250						X						
(U)	RANGE UPGRADES (RTS Block Change)												
(U)	- Begin RTS Block Change (RBC)	*											
(U)	- Vandenberg RBC Critical Design Review (CDR)						X						
(U)	- Vandenberg RBC Functional Config Audit/ Physical Config Audit											X	
(U)	- Transportable RTS CDR							X					
(U)	NETWORK OPERATIONS UPGRADES												
(U)	- Start OAS follow-on effort		*										
(U)	- OAS follow-on CDR							X					
(U)	- Start Resource Schedule Capacity upgrade										X		
(U)	- Begin integration Transportable RTS core										X		

*=completed; X=planned

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

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(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2002	FY 2003	FY 2004
(U)	Communications Upgrades	9,295	0	0
(U)	Range Upgrades	15,000	10,321	9,741
(U)	Network Ops Upgrades	8,293	2,920	5,155
(U)	Network Integration and Systems Engineering	100	0	0
(U)	Program Support	10,166	3,538	3,707
(U)	Identified for reprogramming to higher AF priorities	4,524		
(U)	Total	47,378	16,779	18,603

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

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Additional Reprogramming						4,524				4,524
Product Development Organizations										
Lockheed Martin (Range & Comm Development Contract)	C/CPAF	Mar 96	133,846	133,846	124,551	9,295	0	0	0	133,846
Honeywell Technology Solutions (Satellite Control Network Contract*)	C/CPAF	Dec 01	86,200	86,200	1,098	23,293	13,241	14,896	33,672	86,200
Lockheed Martin (Network Integration Contract)	C/CPAF	May 96	46,057	46,057	45,957	100	0	0	0	46,057
*note: EACs include basic contract and options but do not include unpriced, future ECPs										
Support and Management Organizations										
Program Support (FFRDC, SETA, SPO Ops)	various	various	N/A	N/A	69,446	10,166	3,538	3,707	Continuing	TBD

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(U) Performing Organizations Continued:

Test and Evaluation Organizations

N/A

(U) Government Furnished Property:

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

Subtotals	Total Prior to FY 2002	Budget FY 2002	Budget FY 2003	Budget FY 2004	Budget to Complete	Total Program
Subtotal additional reprogrammings		4,524				4,524
Subtotal Product Development	171,606	32,688	13,241	14,896	33,672	266,103
Subtotal Support and Management	69,446	10,166	3,538	3,707	TBD	TBD
Subtotal Test and Evaluation						
Total Project	241,052	47,378	16,779	18,603	TBD	TBD