

**UNCLASSIFIED**

PE NUMBER: 0305110F

PE TITLE: Satellite Control Network

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2007</b>
---	------------------------------

<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305110F Satellite Control Network</b>
--	---

Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	24.609	19.783	27.256	17.005	19.316	17.171	17.501	17.857	Continuing	TBD
3276 Satellite Control Network	24.609	19.783	27.256	17.005	19.316	17.171	17.501	17.857	Continuing	TBD

**(U) A. Mission Description and Budget Item Justification**

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. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a Joint Staff Capstone Requirements Document and a Headquarters 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 provides unique capability for DoD to deploy and operate its satellites. AFSCN provides 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 and future satellite systems: Defense Meteorological Satellite Program (DMSP), Global Positioning System (GPS), Defense Satellite Communications System (DSCS), Defense Support Program (DSP), Space Based Infrared System (SBIRS), Space Based Surveillance System (SBSS), Space Tracking and Surveillance System (STSS), Fleet Satellite (FLEETSAT), Military Strategic and Tactical Relay Satellite (MILSTAR), the Navy's Ultra High Frequency Follow-On (UHF F/O), Mobile User Objective System (MUOS), Advanced EHF (AEHF), Wideband Global SATCOM (WGS), Transformational Communications Satellites (TSAT), Skynet, NATO III/IV, and classified programs. Support to NASA and National Oceanic and Atmospheric Administration (NOAA) satellites is provided on an "as required" basis. In addition, the AFSCN provides launch and early orbit tracking operations in support of all major US launches and provides satellite end-of-life disposal operations. It is the world's only global satellite control network equipped with high-power capability necessary for satellite rescue and anomaly resolution 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, unsupported 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 reduce hardware/software maintenance costs. The principal efforts within this program are currently focused on Range Upgrades and Network Operations Upgrades.

RANGE UPGRADES: This effort will upgrade the current RTSs. 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. We will also examine the capability of phased array antenna in the RBC upgrade. Additionally, interoperability efforts to address standards and protocols and external

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305110F Satellite Control Network

user connectivity are included in this segment.

NETWORK OPERATIONS UPGRADES: These upgrades, that include resource scheduling and orbit analysis system follow-on, build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem (OAS) deliveries to improve AFSCN resource management capabilities. These capabilities include electronic scheduling and status report information dissemination. Also, these upgrades provide the infrastructure for a multi-domain and web-based system.

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

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	31.170	19.907	17.501	16.798
(U) Current PBR/President's Budget	24.609	19.783	27.256	17.005
(U) Total Adjustments	-6.561	-0.124		
(U) Congressional Program Reductions		-0.049		
Congressional Rescissions	-0.003	-0.075		
Congressional Increases				
Reprogrammings	-5.669			
SBIR/STTR Transfer	-0.889			

(U) **Significant Program Changes:**

FY06: Below Threshold Reprogrammings for higher Air Force priorities

FY08: Increase (+9.5M) to complete high power amplifier development and continue tracking station upgrades

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2007

BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE		
<b>07 Operational System Development</b>				<b>0305110F Satellite Control Network</b>				<b>3276 Satellite Control Network</b>		
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
3276 Satellite Control Network	24.609	19.783	27.256	17.005	19.316	17.171	17.501	17.857	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

**(U) A. Mission Description and Budget Item Justification**

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. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a Joint Staff Capstone Requirements Document and a Headquarters 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 provides unique capability for DoD to deploy and operate its satellites. AFSCN provides 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 and future satellite systems: Defense Meteorological Satellite Program (DMSP), Global Positioning System (GPS), Defense Satellite Communications System (DSCS), Defense Support Program (DSP), Space Based Infrared System (SBIRS), Space Based Surveillance System (SBSS), Space Tracking and Surveillance System (STSS), Fleet Satellite (FLEETSAT), Military Strategic and Tactical Relay Satellite (MILSTAR), the Navy's Ultra High Frequency Follow-On (UHF F/O), Mobile User Objective System (MUOS), Advanced EHF (AEHF), Wideband Global SATCOM (WGS), Transformational Communications Satellites (TSAT), Skynet, NATO III/IV, and classified programs. Support to NASA and National Oceanic and Atmospheric Administration (NOAA) satellites is provided on an "as required" basis. In addition, the AFSCN provides launch and early orbit tracking operations in support of all major US launches and provides satellite end-of-life disposal operations. It is the world's only global satellite control network equipped with high-power capability necessary for satellite rescue and anomaly resolution 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 reduce hardware/software maintenance costs. The principal efforts within this program are currently focused on Range Upgrades and Network Operations Upgrades.

**RANGE UPGRADES:** This effort will upgrade the current RTSs. 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. We will also examine the capability of phased array antenna in the RBC upgrade. Additionally, interoperability efforts to address standards and protocols and external user connectivity are included in this segment.

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2007**

<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305110F Satellite Control Network</b>	<b>PROJECT NUMBER AND TITLE</b> <b>3276 Satellite Control Network</b>
--	---	--

NETWORK OPERATIONS UPGRADES: These upgrades, that include resource scheduling and orbit analysis system follow-on, build upon the Electronic Schedule Dissemination (ESD) and Orbit Analysis Subsystem (OAS) deliveries to improve AFSCN resource management capabilities. These capabilities include electronic scheduling and status report information dissemination. Also, these upgrades provide the infrastructure for a multi-domain and web-based system.

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

<b>(U) B. Accomplishments/Planned Program (\$ in Millions)</b>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Range Upgrades: continue upgrades to include development of interoperability and RTS Block Change efforts. Participate in demo of phased array antenna applicability to RBC effort. Continue predeployment system engineering and network integration.	17.181	14.119	20.369	9.707
(U) Network Operations Upgrades: continue upgrades to network operations to include development of Orbit Analysis Subsystem follow-on upgrade, enterprise management, information assurance, and predeployment system engineering and network integration.	0.700	2.000	3.200	3.600
(U) Program support, to include System Program Office operations, SETA, FFRDC and Systems Engineering and Integration	4.265	3.664	3.687	3.698
(U) Conduct research into technical feasibility of augmenting AFSCN capabilities with commercial satellite control antennas (Civil Reserve Space Service -- CRSS)	2.463			
(U) Total Cost	24.609	19.783	27.256	17.005

<b>(U) C. Other Program Funding Summary (\$ in Millions)</b>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) OPAF, Electronics & Telecom Equipment (BA 03, PE 0305110F, P-64)	50.251	84.971	50.268	66.282	63.527	66.160	67.459	68.796	Continuing	TBD
(U) OPAF, Initial Spares & Repair Parts (BA 05 PE 0305110F, P-103)	3.567	3.551	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.098

**(U) D. Acquisition Strategy**  
The AF uses the competitively awarded Satellite Control Network Contract (SCNC), managed by Space and Missile System Center, to modernize and sustain the AFSCN on a non-interference basis as it continues to support operational, RDT&E, and other designated users.

UNCLASSIFIED

**Exhibit R-3, RDT&E Project Cost Analysis**

DATE  
**February 2007**

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE				
<b>07 Operational System Development</b>				<b>0305110F Satellite Control Network</b>						<b>3276 Satellite Control Network</b>				
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>														
Satellite Control Network Contract	C/CPAF	Honeywell, Colorado Springs, CO	61.699	17.881	Jan-06	16.119	Dec-06	23.569	Dec-07	13.453	Dec-08	Continuing	TBD	TBD
Congressional increase for Civil Reserve Space Service	various	various	4.275	2.463	Sep-06	0.000							6.738	TBD
Subtotal Product Development			65.974	20.344		16.119		23.569		13.453		Continuing	TBD	TBD
Remarks:														
(U) <u>Support</u>														
Program Support (FFRDC, SETA, SPO ops)	various	various	65.974	4.265	Dec-05	3.664	Dec-06	3.687	Dec-07	3.552	Dec-08	Continuing	TBD	TBD
Subtotal Support			65.974	4.265		3.664		3.687		3.552		Continuing	TBD	TBD
Remarks:														
(U) <u>Subtotal additional reprogrammings</u>														
(U) Total Cost			131.948	24.609		19.783		27.256		17.005		Continuing	TBD	TBD
Remarks:														

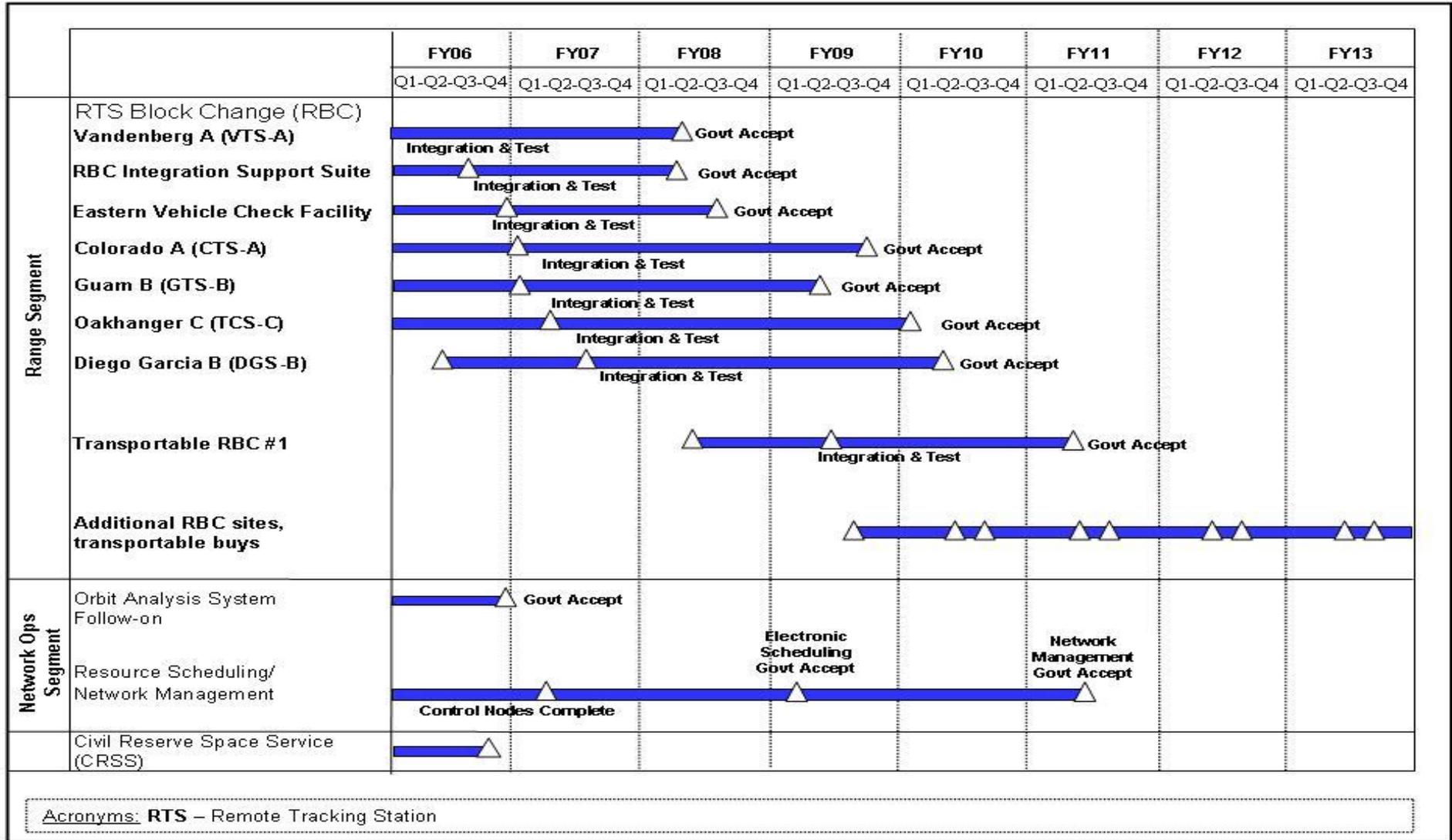
Exhibit R-4, RDT&E Schedule Profile

DATE  
February 2007

BUDGET ACTIVITY  
07 Operational System Development

PE NUMBER AND TITLE  
0305110F Satellite Control Network

PROJECT NUMBER AND TITLE  
3276 Satellite Control Network



**Exhibit R-4a, RDT&E Schedule Detail**

DATE  
**February 2007**

BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0305110F Satellite Control Network</b>	PROJECT NUMBER AND TITLE <b>3276 Satellite Control Network</b>
---	--	---

(U) <b>Schedule Profile</b>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) RANGE UPGRADES (Remote Tracking Station (RTS) Block Change)				
(U) - Vandenberg RTS Gov't acceptance			2Q	
(U) - RBC Integration Support Suite Gov't acceptance			2Q	
(U) - Eastern Vehicle Check Facility			3Q	
(U) - Begin Diego Garcia RTS block change	2Q			
(U) - Begin Transportable RBC #1			2Q	
(U) - Begin New Boston RTS block change				2Q
(U) NETWORK OPERATIONS UPGRADES				
(U) - Orbit Analysis System Follow-on Gov't acceptance	4Q			
(U) - Resource Scheduling control nodes upgrade complete		2Q		
(U) - Electronic Scheduling Gov't acceptance				2Q