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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2013 Air Force **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305110F: <i>Satellite Control Network</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	25.652	18.143	33.773	-	33.773	35.698	21.192	14.477	15.745	Continuing	Continuing
673276: <i>Satellite Control Network</i>	25.652	18.143	33.773	-	33.773	35.698	21.192	14.477	15.745	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**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 DoD, Intelligence Community (IC), and Civil operational and RDT&E missions, and other designated users. The AFSCN is a fielded, globally-distributed infrastructure of control centers, Remote Tracking Stations (RTSs), and communications links that provides unique capability for designated users to deploy and operate their 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. Air Force Space Command (AFSPC) performs operations, maintenance, modernization, and sustainment of the system to provide operational capabilities validated by a US Strategic Command (USSTRATCOM) Initial Capabilities Document and a Headquarters USAF-approved Operational Requirements Document (ORD). This program element funds the development and acquisition of AFSCN Improvement and Modernization (I&M), an ongoing program of replacements and upgrades which will meet validated USSTRATCOM and AFSPC operational requirements to replace non-standard, unsupportable equipment with more reliable, maintainable, interoperable, and standardized hardware and software. This new equipment is intended to enable AFSPC satellite operations to be performed with reduced hardware/software maintenance costs. The principal efforts within this program are currently focused on Range Upgrades, Network Operations Upgrades, training tools, and associated studies.

RANGE UPGRADES include the RTS Block Change (RBC), which will standardize, automate and make interoperable the remote tracking stations through the replacement of outdated government-unique equipment with standardized equipment and technology in order to reduce failures, correct operational deficiencies, and reduce operating and sustainment costs; the Unified S-band (USB) high power amplifier development for the RTS to enable dual frequency band uplink commanding of satellites; and systems engineering to ensure integrated upgrade efforts. FY13 funds include, but are not limited to systems engineering, integration, and test support for the Transportable RBC and continued USB high power amplifier development.

NETWORK OPERATIONS UPGRADES improve AFSCN resource management capabilities. The focus of these efforts is on the upgrade of the Electronic Scheduling and Dissemination (ESD) system, which enables satellite operators at over 40 geographically separated locations to request "contact time" with their satellites via the shared AFSCN antennas, and allows AFSCN schedulers to de-conflict overlapping requests to create and publish a schedule. FY13 funds continue development of ESD 3.0 software builds and testing.

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

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>
Previous President's Budget	21.667	18.337	14.792	-	14.792
Current President's Budget	25.652	18.143	33.773	-	33.773
Total Adjustments	3.985	-0.194	18.981	-	18.981
• Congressional General Reductions	-	-0.194			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.096	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.111	-	18.981	-	18.981

**Change Summary Explanation**

FY11: -\$0.111M Congressional General Reductions (CGRs). Increase of +\$4.096 due to higher Department priorities

FY12: -\$0.194M reduction for CGRs

FY13: Program funding net increase \$18.981M due to higher Department priorities

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<b>Title:</b> RTS Block Change (RBC)	2.407	4.742	3.893
<b>Description:</b> Continue RBC development to replace outdated, unique RTS equipment with standardized equipment and technology to reduce failures and enhance sustainability			
<b>FY 2011 Accomplishments:</b> Completed Transportable RBC design and began integration and testing in all configurations			
<b>FY 2012 Plans:</b> Complete Segment Verification Testing for Transportable RBC in all configurations and begin Integrated System Testing			
<b>FY 2013 Plans:</b> Complete systems engineering, integration and testing for Transportable RBC			
<b>Title:</b> USB High Power Amplifier	5.894	6.607	1.975
<b>Description:</b> Develop high power amplifier for RBC to enable uplink commanding of satellites using USB frequency in addition to legacy L-band frequency uplink commanding			
<b>FY 2011 Accomplishments:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Completed system requirements definition; completed System requirements Review and Technical Requirements Document <b>FY 2012 Plans:</b> Begin Phase 2, first article development; refine design into detailed configuration-item level design <b>FY 2013 Plans:</b> Complete Preliminary Design Review and Critical Design Review; complete Hardware and software integration, install and begin testing				
<b>Title:</b> Systems Engineering <b>Description:</b> Provide test, Information Assurance (IA), requirements management, and system architecture support the AFSCN <b>FY 2011 Accomplishments:</b> Provided testing, IA, and work package planning for Oakhanger RBC and high power amplifier troubleshooting; continued prototyping and demo for compatible satellite command and control effort; developed requirements databases <b>FY 2012 Plans:</b> Provide testing, IA, and work package planning for RBC electronics core activities; complete enabling concept for advanced antenna complete AFSCN architecture roadmap <b>FY 2013 Plans:</b> Provide test, IA, and work package planning for RBC electronics core activities; develop design and prototype advanced antenna; design RTS performance monitoring at RBC site; design training tools		4.003	1.982	5.130
<b>Title:</b> ESD 3.0 <b>Description:</b> Continue ESD 3.0 development <b>FY 2011 Accomplishments:</b> Continued ESD 3.0 development completing four software builds, integration and checkout. <b>FY 2012 Plans:</b> Complete additional software builds and test multiple functions on operational AFSCN to verify architecture <b>FY 2013 Plans:</b> Complete additional software builds and complete Phase 1 segment verification testing		9.361	1.250	20.000
<b>Title:</b> Program Support / Management Services <b>Description:</b> Program support to include FFRDC (Aerospace) and SETA		3.987	3.562	2.775

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
<b><i>FY 2011 Accomplishments:</i></b> Program support to include FFRDC and SETA			
<b><i>FY 2012 Plans:</i></b> FFRDC services provided in support of program office management processes to include program oversight and milestone and schedule tracking.			
<b><i>FY 2013 Plans:</i></b> FFRDC services in support of program office management processes including program oversight as well as milestone and schedule tracking			
<b>Accomplishments/Planned Programs Subtotals</b>	25.652	18.143	33.773

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• P-44: <i>OPAF, PE 0305110F, Satellite Control Network (Space)</i>	60.050	60.592	44.219	0.000	44.219	42.833	53.355	62.033	60.693	Continuing	Continuing

**E. Acquisition Strategy**  
The AF uses the competitively awarded Satellite Control Network Contract (SCNC), managed by Space and Missile Systems Center, to modernize and sustain the AFSCN on a non-interference basis as it continues to support operational, RDT&E, and other designated users. The AF has also awarded sole source modifications to Honeywell to continue to modernize the AFSCN. The AF uses the existing SMC Technical Services Contract for information assurance systems engineering for AFSCN modernization.

**F. Performance Metrics**  
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force		<b>DATE:</b> February 2012
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Eastern Vehicle Check Facility Gov't accept	2	2011	2	2011
Colorado-A RBC integration/test/Gov't accept	1	2011	2	2012
Guam-B RBC integration/test/Gov't accept	1	2011	4	2012
Oakhanger-C RBC integration/test/Gov't accept	1	2011	2	2012
Diego Garcia-B RBC integration/test/Gov't accept	1	2011	1	2013
Transportable RBC integration/test/Gov't accept	1	2011	4	2013
Hawaii-A RBC contract award/integration/test/Gov't accept	1	2011	3	2013
New Hampshire-B RBC contract award/integration/test/Gov't accept	1	2011	3	2014
Thule-C RBC contract award/integration/test/Gov't accept	3	2011	1	2016
Guam-A RBC core contract award/integration/test/Gov't accept	3	2012	4	2014
Hawaii-B RBC core contract award/integration/test/Gov't accept	3	2012	4	2014
New Hampshire-A RBC core contract award/integration/test/Gov't accept	2	2013	2	2015
Additional RBC contract awards	2	2014	2	2017
S Band/Dual Band High Power Amplifier development contract award	2	2011	2	2011
S Band/Dual Band Preliminary Design Review	1	2013	1	2013
S Band/Dual Band Critical Design Review/integration/test/Gov't accept	3	2013	2	2014
Electronic Scheduling & Dissemination (ESD) Integrated Baseline Review	1	2012	1	2012
ESD Integrated System Test	3	2014	3	2014
ESD Gov't accept	2	2015	2	2015