

CLASSIFICATION:								
EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /				R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)				
BA 7								
COST (\$ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	715.169	651.227	474.009					
0728 EHF Satellite Communications (SATCOM) Terminals	98.371	121.883	82.880					
0731 Fleet Satellite Communications	11.846	8.091	1.067					
2472 Mobile User Objective System	593.425	515.278	387.526					
9122 Advanced Wideband System/Transformational Communications	7.472	5.178	2.536					
9999 Congressional Adds	4.055	0.797						
Quantity of RDT&E Articles	4	0	0					
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) 0728 EHF SATCOM Terminals: The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS) and Global Broadcast System (GBS). The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System and WGS Operational Requirements Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms. The Commercial Broadband Satellite Program (CBSP) will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. Program efforts include investigation of emergent technologies through studying, development, and testing of insertion feasibility. (U) 0731 Fleet Satellite Communications: The Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) Control System provides replacement of all non-Chairman Joint Chiefs Staff Instruction (CJCSI) 6251.01 UHF MILSATCOM legacy equipment at Naval Computer & Telecommunications Area Master Station (NCTAMS) Atlantic (LANT), NCTAMS Pacific (PAC), Naval Computer & Telecommunications Station (NCTS) Naples and NCTS Guam; also replaces non-supportable aging WSC-5 terminals. Provides centralized control of full UHF Follow-On (UFO) satellite constellation. Expands channel control capacity with Digital Modular Radio (DMR) at NCTAMS/NCTS; each site will control up to 152 non-processed UHF MILSATCOM channels in adjacent satellite coverage areas using both physical and virtual channel control techniques. Remains backward compatible with all versions of all Demand Assigned Multiple Access (DAMA) waveforms; supports future waveform modifications and additions. Implements decentralized management of UHF SATCOM communications assets. Automated planning and management of UHF MILSATCOM resource with the Network Management System (NMS). Maintains planning reference data: terminals, networks, configuration codes. Defines and ranks communication service requirements. CJCSI 6251.01 Rev B states MILSTD-188-181C/182B/183B (Integrated Waveform or IW) as optional waveforms for terminals. This requires mandatory implementation into JMINI Control System. Beginning in FY 2009, funding supports development of next generation JMINI control system to replace non-supported equipment, reduce system components, support technology insertion and system re-architecture.								

Exhibit R-2, RD TEN Budget Item Justification

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA 7 R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:	
(U) 0731 Fleet Satellite Communications (continued): The Sensitive Compartmented Information Networks (SCI Networks) is an evolutionary acquisition program designed to provide enabling technology necessary to provide Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and procedural security will be used to control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will greatly expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, Indications and Warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). The SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems. The SCI Networks program will start migrating to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Adaptive Network Edge Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). (U) Maritime integrated Broadcast Service (MIBS) (formerly Tactical Data Information Exchange Subsystem Broadcast (TADIXS-B)) Program Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard US Navy ships, submarines, aircraft, and other joint platforms. It will provide means to disseminate organically derived data from Navy platforms to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to delivery near real time data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including; Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare (USW), Electronic Warfare (EW). The program encompass all Maritime (Navy, Coast Guard, and Air Force) IBS systems (Joint Tactical Terminal - Maritime (JTT-M) and a Radiant Ether (RE) follow-on like system known as Network Enabled IBS (NEIBS)). These systems will provide the Navy, Coast Guard other joint platforms with a coherent approach to fielding maritime IBS systems to take advantage of all available pathways and services. (U) NEIBS (Radiant Ether follow-on): An IBS network solution that provides IBS data to users via SIPRNET, while minimizing utilized bandwidth. NEIBS is a concept for net-centric software-based processing of Integrated Broadcast Service-Simplex (IBS-S) and Integrated Broadcast Service-Interactive (IBS-I) data. The software will receive IBS data through the shipboard network. It will reside on the ship's General Secret (GENSER) Local Area Network (LAN), providing IBS data to required Tactical Data Processors (TDPs) via Transmission Control Protocol/Internet Protocol (TCP/IP). (U) Manage and resource / coordinate resourcing of experiments and pilot testing of Internet Protocol version 6 (IPv6) technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6. (U) 2472 Mobile User Objective System: The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS Program requirements are baselined to the 15 January 2008 Capability Production Document (CPD) Increment 1 validated by Joint Requirements Oversight Council Memorandum (JROCM) 015-08, which was derived from the 17 July 2001 MUOS Operational Requirements Documents (ORD) as modified by JROCM 187-03, dated 23 September 2003. (U) This MUOS Research Development Test & Evaluation, Navy (RDTEN) effort supports a Milestone Decision Authority (MDA) approved On-Orbit Capability (OOC) in 2010 and Full Operational Capability (FOC) in 2014. A MUOS Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 to Lockheed Martin after Key Decision Point (KDP) B. The approval at KDP-B in September 2004 officially designated the MUOS Program as a DoD Space Major Defense Acquisition Program. The program completed its Build Approval Review in FY 2008. FY 2009 MUOS efforts focused on fabrication, assembly, integration and testing of the first two satellites, and continued fielding and testing of the ground equipment. In FY 2010, MUOS efforts will continue to work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure. Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.	

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:	
EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)
BA 7	
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:	
(U) 9122 Advanced Wideband System/Transformational Communications: The Navy Transformational Communications (NTC) terminal program provides for the development and production of terminals to provide high capacity, reliable, Anti-Jam/Low Probability of Intercept (AJ/LPI) communications capability to the fleet. Terminals will support multiple data streams over Q-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals. Development will focus on a Local Area Network (LAN) to Antenna capability, including quality of service required for unique Navy missions. The Advanced Wideband System/Transformational Communications (AWS/TC) Program draft acquisition strategy consists of terminal suite development and environmental qualification, on-orbit testing, platform integration and test, software enhancements and regression testing throughout the life of the program. (U) 9999 Congressional Adds: The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Satellite Communication (SATCOM) (Military and Commercial) multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. The project was realigned to the Navy from the United States Air Force starting in FY 2004. This project includes conducting JIST-NET software development and engineering analysis. The project is currently in the system development and demonstration phase; and has been approved as a pre-acquisition project. The long-term goal is to provide dynamic real time or near real time apportionment, allocation, and adjudication of satellite resources for the warfighters based on priorities and requirements as assigned by the Operational Command. FY 2010 will be utilized for continued Navy Multiband Terminal (NMT), SCI Networks, MIBS/Radiant Ether, IPv6 transition, MUOS, and ASW/TC development.	

Exhibit R-2, RDTEN Budget Item Justification

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		0303109N Satellite Communications (Space)		
BA 7				
(U) B. PROGRAM CHANGE SUMMARY:				
(U) Funding:		FY 2008	FY 2009	FY 2010
FY 2009 President's Budget		724.771	652.463	500.926
FY 2010 President's Budget		715.169	651.227	474.009
Total Adjustments		(9.602)	(1.236)	(26.917)
Summary of Adjustments:				
Congressional Adjustments			(2.011)	
Program Adjustments			0.800	(15.296)
Rate/Miscellaneous Adjustments			(0.025)	(11.621)
Subtotal		0.000	(1.236)	(26.917)
(U) Schedule:				
Fleet Satellite Comm. (project 0731)				
Sensitive compartmented Information (SCI) Networks: Minor software delivery and testing updates. Events added for migration to Integrated Shipboard Network System (ISNS) Inc 2/Consolidated Adaptive Network Edge Services (CANES) beginning in FY 2009 to move to a Common Computing Environment (CCE) and Service Oriented Architecture (SOA). Full transition to CANES Inc 1 occurs in FY 2010.				
MIBS/Radiant Ether (RE): During the FY09 President's Budget Systems Integration was scheduled in FY09 (1QTR) through FY10 (4 QTR). Added Software Integration in FY09 (1-2 QTR) to allow time to determine which available Government-Off-The Shelf (GOTS) software will be used in Radiant Ether (RE). System Integration will begin after Software Integration is completed.				
Mobile User Objective System (project 2472)				
MUOS schedule updated to reflect changes to the test plan and Launch and On-Orbit Capability date for Satellite 1. Changes resulting from technical design challenges for spacecraft 1, causing contractor schedule margin erosion.				
(U) Technical:				
Mobile User Objective System (project 02472)				
No significant technical changes.				

Exhibit R-2, RDTEN Budget Item Justification

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		98.371	121.883	82.880				
RDT&E Articles Qty		3						
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate / Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS), and Global Broadcast System (GBS). The new system will equip the warfighters with assured, jam resistant, secure communications as described in both the joint AEHF Satellite Communications System and the WGS Operational Requirement Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms. (U) The Commercial Broadband Satellite Program (CBSP) will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. FY 2010 will be utilized for continued Navy Multiband Terminal (NMT) development.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals													
(U) B. Accomplishments/Planned Program															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;"></th> <th style="width: 12.5%;">FY 2008</th> <th style="width: 12.5%;">FY 2009</th> <th style="width: 12.5%;">FY 2010</th> </tr> <tr> <td>Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)</td> <td style="text-align: center;">10.167</td> <td style="text-align: center;">4.932</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> </table>					FY 2008	FY 2009	FY 2010	Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)	10.167	4.932	0.000	RDT&E Articles Quantity	3		
	FY 2008	FY 2009	FY 2010												
Commercial Broadband Satellite Program (CBSP) (Formerly New-Start Commercial Terminal)	10.167	4.932	0.000												
RDT&E Articles Quantity	3														
(U) FY 2008: Commenced development of acquisition documentation including Acquisition Program Baseline (APB), Life Cycle Cost Estimate (LCCE), Test & Evaluation Master Plan (TEMP), Acquisition Strategy/Acquisition Plan (AS/AP), Integrated Logistics Assessment (ILA), Clinger-Cohen Act (CCA) compliance documentation, Information Support Plan (ISP), market research, and engineering studies. Purchased and tested Commercial off-the-shelf (COTS) terminals. (U) FY 2009: Complete development of acquisition documentation and testing of COTS terminals. (U) FY 2010:															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;"></th> <th style="width: 12.5%;">FY 2008</th> <th style="width: 12.5%;">FY 2009</th> <th style="width: 12.5%;">FY 2010</th> </tr> <tr> <td>NMT Development, First & Second Phases</td> <td style="text-align: center;">88.204</td> <td style="text-align: center;">116.951</td> <td style="text-align: center;">82.880</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> </tr> </table>					FY 2008	FY 2009	FY 2010	NMT Development, First & Second Phases	88.204	116.951	82.880	RDT&E Articles Quantity			
	FY 2008	FY 2009	FY 2010												
NMT Development, First & Second Phases	88.204	116.951	82.880												
RDT&E Articles Quantity															
(U) Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of SATCOM-related program insertion. (U) First and second phases of Navy Multiband Terminal (NMT) development for System Design and Development (SDD) for ship, shore, and submarine platforms. (U) FY 2008: Continued design and development of 20 Q/Ka capable Engineering Development Models (EDM), X-band add-ons for submarines, and X/Ka kits for ships. Additional security measures were incorporated into the terminal software and hardware to support Department of Defense (DoD) Information Technology Security Certification and Accreditation Process (DITSCAP) certification prior to EDM fielding for Developmental Test /Operational Test (DT/OT). (U) FY 2009: Complete design and development of 20 Q/Ka capable EDMs, X-band add-ons for submarines, and continue development of X/Ka upgrade kits for ships. Additional security measures included in terminal software and hardware will be incorporated and tested via DITSCAP testing. EDMs will be delivered and installed on ship and submarine platforms and a shore site to support DT/OT and preparations for Milestone C. (U) FY 2010: Conduct Development Test/Operational Assessment (DT/OA) of Q/Ka-band capabilities and perform associated system modifications as merited by test results. Receive Milestone C approval. Develop X-band capability.															

Exhibit R-2a, RDTEN Project Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals		

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</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>FY 2014</u>	<u>FY 2015</u>
3215 - OPN Ship and Shore	26.336	26.190	19.455					
CBSP	26.336	26.190	19.455					
<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>					
3216 - OPN Ship and Shore	0	0	72.496					
NMT	0	0	72.496					

(U) Related RDT&E:
 (U) PE 0303603F, MILSTAR
 (U) PE 0303601F, Air Force Satellite Communications

(U) D. ACQUISITION STRATEGY:

(U) NMT concept exploration contracts were awarded in FY 2001. Two System Development and Demonstration (SDD) contracts were competitively awarded in FY 2004 for the development and demonstration of four prototype terminals per vendor (eight total). In FY 2007, a down select to Raytheon occurred for the development, demonstration and procurement of 20 Engineering Development Models (EDMs) which will incorporate integrated multi-band capabilities for Q/Ka band, Submarine X-Band, and Ship X/Ka frequency band communication requirements.

U) CBSP will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. Acquisition documentation development and concept studies and analyses will be accomplished using existing contracts.

(U) F. METRICS:

NMT Earned Value Management (EVM) is used for metrics reporting and risk management.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)									DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7				PROGRAM ELEMENT 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	CPAF	Various	176.954	0.800	10/08							
Hardware Development	C/FFP	Harris (Melbourne, FL)	6.551									
NMT EDM Development	CFAF	Raytheon (Marlborough, MA)	98.277	67.658	10/08	47.679	10/09					
Hardware Development	WR	SSC SD (San Diego, CA)	1.077									
Hardware Development	WR	SSC CH (Charleston, SC)										
Ancillary Hardware Development	CPAF	Raytheon (Marlborough, MA)	57.790									
Software Development	WR	NUWC (Newport, RI)	9.161									
Software Development	CPAF	Raytheon (Marlborough, MA)	3.692	22.680	10/08	12.214	10/09					
Software Development	WR	Various										
Systems Engineering	WR	SSC SD (San Diego, CA)	17.729	3.132	10/08	2.759	10/09					
Systems Engineering	WR	NUWC (Newport, RI)	15.539	5.294	10/08	5.411	10/09					
Systems Engineering	Various	Various	30.367	3.857	10/08	3.576	10/09					
Government Furnished Equipment (GFE)	Various	Various	10.214									
Subtotal Product Development			427.351	103.421		71.639						
Remarks:												
Development Support	WR	Various	7.637	2.000	10/08	1.375	10/09					
Logistics Support	Various	Various	1.582	1.021	10/08	0.702	10/09					
Studies & Analysis	WR	Various	6.459	0.243	10/08	0.167	10/09					
Information Assurance	Various	Various	1.684	1.068	10/08	0.734	10/09					
Subtotal Support			17.362	4.332		2.978						
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N / BA-7

0303109N Satellite Communications (Space)

0728 EHF SATCOM Terminals

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC SD	13.796	1.545	10/08							
Operational Test & Evaluation	WR	Various	0.556	1.400	10/08							
Subtotal T&E			14.352	2.945		0.000						

Remarks:

Contract Management	Various	Various	6.022	2.381	10/08	1.666	10/09					
Program Management	Various	Various	9.047	4.076	10/08	3.270	10/09					
Acquisition Management	Various	Various	3.791	4.429	10/08	3.020	10/09					
Acquisition Management	WR	NCCA	0.653									
Travel		Gov't Travel	0.687	0.300	10/08	0.307	10/09					
Subtotal Management			20.200	11.186		8.263						

Remarks:

Total Cost			479.265	121.883		82.880	0.000					
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Remarks:

CLASSIFICATION:

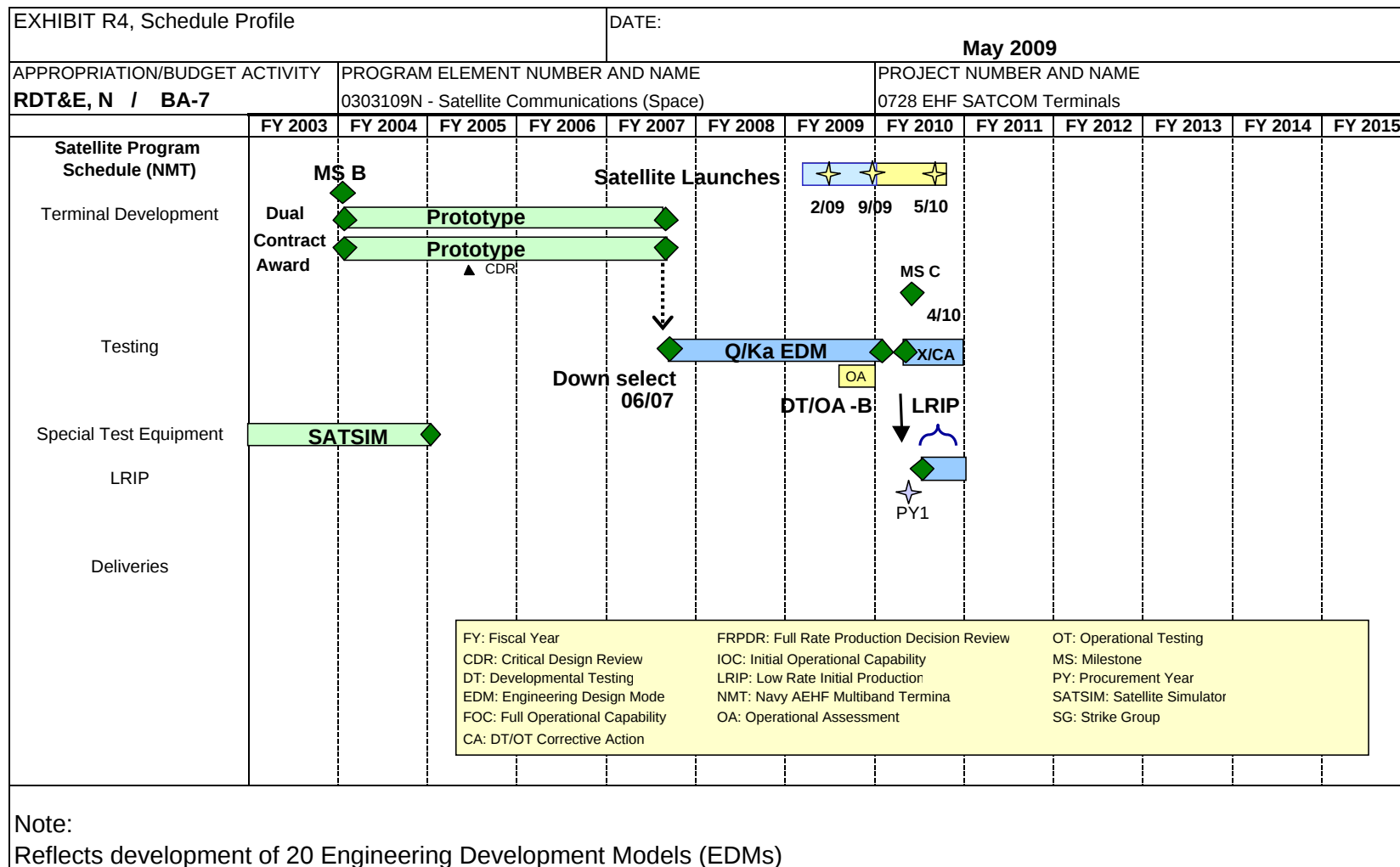


Exhibit R-4, RD TEN Schedule Profile

UNCLASSIFIED

CLASSIFICATION:

[illegible]

NOTE 1: FOC is scheduled for 2Q FY 2015.

Exhibit R-4a, RDTEN Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile				DATE: May 2009			
APPROPRIATION/BUDGET ACTIVIT		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E, N / BA-7		0303109N - Satellite Communications (Space)			0728 EHF SATCOM Terminals		

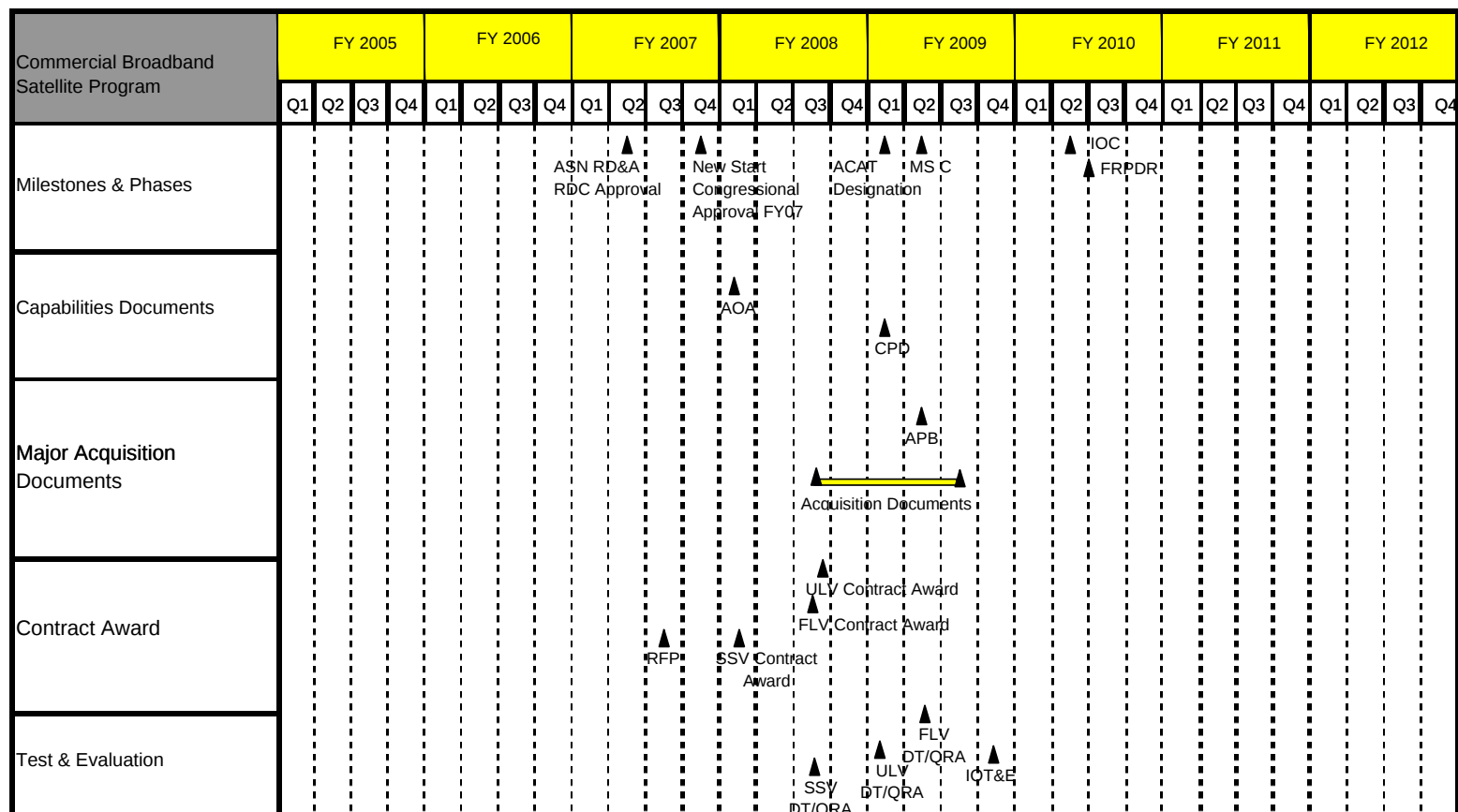


Exhibit R-4, RDTEN Schedule Profile

UNCLASSIFIED

CLASSIFICATION:

[illegible]

Exhibit R-4a, RD TEN Schedule Detail

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 0731 Fleet Satellite Communications			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		11.846	8.091	1.067				
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
(U) The Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) Control System provides replacement of all non-Chairman Joint Chiefs Staff Instruction (CJCSI) 6251.01 UHF MILSATCOM legacy equipment at Naval Computer & Telecommunications Area Master Station (NCTAMS) Atlantic (LANT), NCTAMS Pacific (PAC), Naval Computer & Telecommunications Station (NCTS) Naples and NCTS Guam; also replaces non-supportable aging WSC-5 terminals. Provides centralized control of full UHF Follow-On (UFO) satellite constellation. Expands channel control capacity with Digital Modular Radio (DMR) at NCTAMS/NCTS; each site will control up to 152 non-processed UHF MILSATCOM channels in adjacent satellite coverage areas using both physical and virtual channel control techniques. Remains backward compatible with all versions of all Demand Assigned Multiple Access (DAMA) waveforms; supports future waveform modifications and additions. Implements decentralized management of UHF SATCOM communications assets. Automated planning and management of UHF MILSATCOM resources with the Network Management System (NMS). Maintains planning reference data: terminals, networks, configuration codes. Defines and ranks communications service requirements. CJCSI 6251.01 Rev B states MILSTD-188-181C/182B/183B (Integrated Waveform or IW) as optional waveforms for terminals. (U) The Sensitive Compartmented Information Networks (SCI Networks), is an evolutionary acquisition program designed to provide enabling technology necessary to provide Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and procedural security will be used to control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will greatly expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, indications and warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). The SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems. The SCI Networks program will start migrating to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Afloat Network Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS); and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). Full transition to CANES inc 1 occurs in FY2010. (U) Maritime integrated Broadcast Service (MIBS) (formerly Tactical Data Information Exchange Subsystem Broadcast (TADIXS-B)) Program Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard US Navy ships, submarines, aircraft, and other joint platforms. It will provide means to disseminate organically derived data from Navy platforms to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to delivery near real time data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including; Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare (USW), Electronic Warfare (EW). The program encompass all Maritime (Navy, Coast Guard, and Air Force) IBS systems (Joint Tactical Terminal - Maritime (JTT-M) and a Radiant Ether (RE) follow-on like system known as Network Enabled IBS (NEIBS)). These systems will provide the Navy, Coast Guard other joint platforms with a coherent approach to fielding maritime IBS systems to take advantage of all available pathways and services. (U) Network Enabled Integrated Broadcast Service (NEIBS) (RE follow-on): An IBS network solution that provides IBS data to users via SIPRNET, while minimizing utilized bandwidth. NEIBS is a concept for net-centric software-based processing of Integrated Broadcast Service-Simplex (IBS-S) and Integrated Broadcast Service-Interactive (IBS-I) data. The software will receive IBS data through the shipboard network. It will reside on the ship's General Secret (GENSER) Local Area Network (LAN), providing IBS data to required Tactical Data Processors (TDPs) via Transmission Control Protocol/Internet Protocol (TCP/IP). (U) Manage and resource / coordinate resourcing of experiments and pilot testing of Internet Protocol version 6 (IPv6) technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6. FY 2010 will be utilized for continued SCI Networks, MIBS and IPv6 Transition development.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
JMINI IW Development	7.611	6.579	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Funding supported joint services development with Defense Information Systems Agency (DISA) for Integrated Waveform (IW) Technology and software development into Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) control system architecture. Effort entailed system prototyping, Developmental Testing (DT) and waveform compliance testing.

(U) FY 2009: Complete IW Technology and software development into Joint Ultra High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated (JMINI) control system architecture. Start and complete software development of the next JMINI control system to replace non-supported equipment, reduce system components, support tech insertion and system re-architecture. Effort is transferring to DISA in FY 2010.

(U) FY 2010: N/A

	FY 2008	FY 2009	FY 2010	
SCI Networks	4.062	0.698	0.653	
RDT&E Articles Quantity				

(U) FY 2008: Continued integration and implementation of SCI Networks and associated Special Intelligence Communications. Completed development of AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems. Continued development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2. Conducted Lab DT on AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems for Submarines and associated Broadcast Control Authority (BCA) shore sites. Performed Developmental Testing (DT) and Observation of Operational Capability (OOC) of COMPOSE 2.0.3 with AN/USQ-148D(V)2. Completed design and development of new server rack. Developed and integrated SCI Networks Common Computing Environment (CCE) system including hardware engineering, software integration, network design and Early Adopter Lab implementation.

(U) FY 2009: Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. Continue development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2 systems. Conduct Lab DT on AN/USQ-148G(V)2 and COMPOSE 3.5. Conduct DT and OOC on AN/USQ-148A(V)5 and AN/USQ-148B(V)3 systems for Submarines and associated Broadcast Control Authority (BCA) shore sites. Start migration to ISNS Inc 2/CANES.

(U) FY 2010: Complete development of AN/USQ-148G(V)2 and AN/USQ-148H(V)2 systems. Program transitions from ISNS Inc2/CANES to CANES Inc1.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
MIBS/Radiant Ether	0.000	0.622	0.200	
RDT&E Articles Quantity				

(U) FY 2008: N/A

(U) FY 2009: FY09 funding will support the integration of Network Enabled Integrated Broadcast Service (NEIBS) (formerly Radiant Ether (RE)) Internet Protocol (IP) based architecture to receive, process, display Integrated Broadcast Service (IBS) data for the Navy. Efforts will entail design architecture testing, documentation, Integrated Logistics Support (ILS) certification and training documentation.

(U) FY 2010: FY10 funding will continue to support the integration of NEIBS to receive, process, display IBS data for the Navy. Efforts will entail completing platform integration and developmental testing (DT), incorporate changes in architecture, technical documentation, & training curriculum resulting from DT.

	FY 2008	FY 2009	FY 2010	
IPv6 Transition	0.173	0.192	0.214	
RDT&E Articles Quantity				

(U) FY 2008: Managed and resourced / coordinated resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2008 included planning and Test & Evaluation (T&E) documentation required to support acquisition programs identified as critical IPv6 elements. Additionally, these funds were utilized to coordinate cross PEO and Joint Service efforts in order to reduce acquisition costs within Navy.

(U) FY 2009: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2009 will include continuation of FY 2008 efforts. Additionally, Navy programs of record supported will expand to begin to include software application migration and transition mechanism support.

(U) FY 2010: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2010 will include continuation of FY 2009 efforts. Additionally, Navy programs of record supported will continue to include software application migration and transition mechanism support.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7		0303109N Satellite Communications (Space)	0731 Fleet Satellite Communications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
OPN - Comm Auto - 3050 - SCI NETWORKS	19.097	19.555	40.655
OPN - Sat Comm - 3215 - JMINI	0.157	2.846	0.000
OPN - Maritime Integrated Broadcast Service- 2900 - MIBS	0.000	5.293	0.793

(U) D. ACQUISITION STRATEGY:

JMINI: The Integrated Waveform upgrade will be performed. It will be joint developed with DISA with a planned software upload date of June 2009. The JMINI Control System provides channel control to all UHF SATCOM DAMA waveforms globally. The Integrated Waveform capability is an enhancement to those MILSATCOM waveforms. Per NC FCB, JMINI Program and DISA are jointly developing technology for emergent delivery to the joint warfighter in June 2009. Technology transition to final implementation into the JMINI architecture has not been determined.

SCI Networks: SCI Network variants are comprised of Commercial Off the Shelf (COTS) equipment and Government Off the Shelf (GOTS) software integrated into SCI Networks designs associated with each class of ship. Next Generation versions are being considered for acquisition via the Lockheed Martin Q-70 contract vehicle.

MIBS: The Network Enabled Integrated Broadcast Service (NEIBS) will be comprised of GOTS software and commercial hardware. NEIBS will provide Internet Protocol (IP) based Integrated Broadcast Service (IBS) capability to the fleet. The efforts include platform integration, Development Test and Evaluation (DT&E) conducted in existing laboratory environment to ensure software maturity prior to Operational Test and Evaluation (OT&E).

IPv6: IPv6 testing and experimentation will be used to manage the risk of transition within existing Programs of Record (PORs). Ultimately, the results of the testing and experimentation will influence the acquisition of IPv6 capable products.

Exhibit R-2a, RDTEN Project Justification

EXHIBIT R4, Schedule Profile														DATE: May 2009																		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																		
RDT&E, N / BA-7				0303109N Satellite Communications (Space)										0731 Fleet Satellite Communications (MIBS/Radiant Ether)																		
Fiscal Year	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones																																
Analysis of IBS Alternatives																																
System/Software Integration																																
Equipment Delivery																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test/JITC																																
Acquisition Documentation																																
NEIBS Installs																																
Remarks:																																

UNCLASSIFIED

CLASSIFICATION:

[illegible]

Exhibit R-4a, RD TEN Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile														DATE: May 2009															
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME															
RDT&E, N / BA-7				0303109N Satellite Communications (Space)										0731 Fleet Satellite Communications (SCI Networks)															
Fiscal Year		FY 2008				FY 2009				FY 2010																			
		1	2	3	4	1	2	3	4	1	2	3	4																
Acquisition Milestones (see notes 1 & 2)						▲								▲															
						MS B ISNS Inc2/CANES								CANES Inc 1 Transition															
Prototype Phase																													
System Development AN/USQ 148D(V)2 AN/USQ 148A(V)5 AN/USQ 148B(V)3 AN/USQ 148G(V)2 AN/USQ 148H(V)2 ISNS INC 2 / CANES (see notes 1 & 2)																													
Equipment Delivery AN/USQ 148A(V)5 AN/USQ 148B(V)3 AN/USQ 148G(V)2 AN/USQ 148H(V)2 (see note 4)							▲		▲						▲														
Software Delivery (see note 5)										COMPOSE 3.0 ▲				COMPOSE 3.5 ▲															
Test & Evaluation Milestones Development Test (see note 6) Operational Test																													
Production Milestones (see note 1) LRIP FRP																													
Deliveries																													
Notes:																													
1. SCI Networks will begin to migrate to ISNS Inc 2/CANES in FY09																													
2. FY10 Program transitions from ISNS Inc2/CANES to CANES Inc1.																													
3. System Development and Equipment Delivery variants enumerated for schedule completeness.																													
4. Software Delivery schedule reflects when COMPOSE is fielded by the program.																													
5. OOC is performed on either a ship, shore, and/or submarine unless otherwise notated.																													
6. OOC = Observation of Operational Capability.																													

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME			
RDTE&E, N / BA-7		0303109N Satellite Communications (Space)			0731 Fleet Satellite Comm (SCI Networks)			
		FY 2008	FY 2009	FY 2010				
	Acquisition Milestone - Post MS C 148D/E PM Memo							
	Acquisition Milestone - Inc 1 Production Mod ADM							
	Acquisition Milestone - MS B ISNS Inc 2/CANES		1Q					
	Acquisition Milestone - ISNS Inc2/CANES to CANES Inc1			1Q				
	System Development - AN/USQ-148D(V)2							
	System Development - AN/USQ-148A(V)5	1Q-2Q						
	System Development - AN/USQ-148B(V)3	1Q-2Q						
	System Development - AN/USQ-148G(V)2	1Q-4Q	1Q-4Q	1Q				
	System Development - AN/USQ-148H(V)2	1Q-4Q	1Q-4Q	1Q				
	System Development - ISNS Inc 2 / CANES		4Q	1Q-4Q				
	Equipment Delivery - AN/USQ-148B(V)3		2Q					
	Equipment Delivery - AN/USQ-148G(V)2			3Q				
	Equipment Delivery - AN/USQ-148H(V)2							
	Software Delivery - COMPOSE 3.0		2Q					
	Software Delivery - COMPOSE 3.5			3Q				
	Software Delivery - COMPOSE 4.0							
	Development Test - Lab DT B(V)3 & A(V)5	2Q						
	Development Test - DT B(V)3 & A(V)5		2Q					
	Development Test - Lab DT 148G/3.5		2Q-3Q					
	Development Test - DT 148G/H/3.5							
	Development Test - Lab DT 4.0							
	Operational Test - OOC 148D & 2.0.3	2Q						
	Operational Test - OOC B(V)3 & A(V)5		2Q					
	Operational Test - OT 148G/H & 3.5							
	Production Milestone - Inc 1 Prod Mod FRP		4Q					

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: May 2009																
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
RDT&E, N / BA-7					0303109N Satellite Communications (Space)								0731 Fleet Satellite Communications (JMINI)																				
Fiscal Year	FY 2008				FY 2009				FY 2010																								
	1	2	3	4	1	2	3	4	1	2	3	4																					
Acquisition Milestones																																	
Software Development																																	
Test & Evaluation Milestones																																	
Development Test																																	
Operational Test																																	
Production Milestones																																	

Note:
Note 1 - IW software development in FY08 will be conducted by DISA. DISA responsible for Milestones, DT/OT, JITC Certification, scheduling and installation.

Exhibit R-4, RDTE Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RD&E, N / BA - 7		0303109N Satellite Communications (Space)				0731 Fleet Satellite Communications - JMINI			
		FY 2008	FY 2009	FY 2010					
	Software Development (DISA)	1Q-4Q	1Q-3Q						
	Software Development (JMINI)								
	Software Development Contract Award								
	Software Delivery								
	Production Contract Award								
	Site Delivery								

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 1)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME				
RDT&E, N / BA-7			0303109N Satellite Communications (Space)					0731 Fleet Satellite Communications				
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date					
Primary Hardware Development	Various	Lockheed Martin	1.400									
Primary Hardware Development	Various	Various	22.663									
Ancillary Hardware Development												
Systems Engineering	WX	SSC PAC	1.308	0.590	Various	0.040						
Systems Engineering	Various	Various		0.430	Various	0.367						
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			25.371	1.020		0.407						
Remarks:												
Development Support	WX	SSC PAC	0.575		Various					Continuing	Continuing	Continuing
Development Support	Various	Various	0.388	0.200	Various	0.190	Various			Continuing	Continuing	Continuing
Software Development	Various	DISA		4.600	12/08					Continuing	Continuing	Continuing
Software Development	Various	Various	5.958	1.630	Various	0.025	Various			Continuing	Continuing	Continuing
Software Development	Various	SSC PAC				0.090				Continuing	Continuing	Continuing
Training Development	WX	SSC PAC		0.050	Various					Continuing	Continuing	Continuing
IPv6 Support	WX	SSC PAC/NRL	0.173	0.192	Various	0.214	Various			Continuing	Continuing	Continuing
Integrated Logistics Support	WX	SSC PAC/LANT	0.190	0.140	Various	0.025				Continuing	Continuing	Continuing
Configuration Management	WX	SSC PAC/LANT		0.020	Various					Continuing	Continuing	Continuing
Technical Data	WX	SSC PAC/LANT		0.050	Various					Continuing	Continuing	Continuing
GFE												
Subtotal Support			7.284	6.882		0.544				Continuing	Continuing	Continuing
Remarks:												

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					May 2009				
RDT&E, N / BA-7			0303109N Satellite Communications (Space)					0731 Fleet Satellite Communications				
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC PAC/LANT	0.755	0.100	Various	0.050	Various					
Developmental Test & Evaluation	Various	Various	0.089	0.043	12/08	0.046	12/09					
Operational Test & Evaluation	WX	SSC PAC										
Live Fire Test & Evaluation												
Test Assets	WX	SSC PAC/LANT		0.014	Various							
Tooling												
GFE												
Subtotal T&E			0.844	0.157		0.096						
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	WX	SSC PAC/LANT	0.215	0.032	Various	0.020	Various					
Travel	WX	SSC PAC	0.046									
Subtotal Management			0.261	0.032		0.020						
Remarks:												
Total Cost			33.760	8.091		1.067						
Remarks:												

Exhibit R-3, RD TEN Cost Analysis

CLASSIFICATION:									
EXHIBIT R-2a, RDT&E Project Justification								DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010					
Project Cost		593.425	515.278	387.526					
RDT&E Articles Qty (MUOS Satellites)		1							
RDT&E Articles Qty (UFO TT&C Terminals)									
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) 2472 Mobile User Objective System: The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2009. The MUOS Program requirements are baselined to the 15 January 2008 Capability Production Document (CPD) Increment 1 validated by Joint Requirements Oversight Council Memorandum (JROCM) 015-08, which was derived from the 17 July 2001 MUOS Operational Requirements Documents (ORD) as modified by JROCM 187-03, dated 23 September 2003. (U) This MUOS Research Development Test & Evaluation, Navy (RDTEN) effort supports a Milestone Decision Authority (MDA) approved On-Orbit Capability (OOC) in 2010 and Full Operational Capability (FOC) in 2014. A MUOS Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 to Lockheed Martin after Key Decision Point (KDP) B. The approval at KDP-B in September 2004 officially designated the MUOS Program as a DoD Space Major Defense Acquisition Program. The program completed its Build Approval Review in FY 2008. FY 2009 MUOS efforts focused on fabrication, assembly, integration and testing of the first two satellites, and continued fielding and testing of the ground equipment. In FY 2010, MUOS efforts will continue to work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure. Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.									

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 2472 Mobile User Objective System	

(U) B. Accomplishments/Planned Program

MUOS	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	591.438	512.282	355.142	
RDT&E Articles Quantity	1			

(U) FY 2008: Continued work on fabrication, assembly, integration and testing of the first two satellites. In addition, continued development of entire ground segment and began fielding and testing.

(U) FY 2009: Continue work on fabrication, assembly, integration and testing of the first two satellites. Continue fielding and testing of the ground segment .

(U) FY 2010: Continue work on the assembly, integration and testing of satellite 1, and begin on-orbit testing, continue fabrication of satellite 2, and develop and test early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Design and test additional engineering changes to the contract baseline primarily due to additional National Security Agency (NSA) requirements. Continue software development and testing for the integrated ground system, which includes the MUOS CAI, as well as continue fielding and testing of the equipment for the ground infrastructure.

Ultra-High Frequency (UHF) Follow-on (FO) Telemetry, Tracking and Command (TT&C) Terminal Upgrades	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	1.987	0.000	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Continued efforts associated with Telemetry, Tracking and Command (TT&C) prototype terminals procurement and installation.

UHF Hosted Payload	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	0.000	2.996	32.384	
RDT&E Articles Quantity				

(U) FY 2009: Developed acquisition strategy and documentation to support contract award for the development of the Ultra-High Frequency (UHF) Satellite Communications (SATCOM) Hosted Payload.

(U) FY 2010: Studies to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will be incorporated into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2.

Exhibit R-2a, RDTEEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA-7		0303109N Satellite Communications (Space)		2472 Mobile User Objective System

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
BLI 2433: Mobile User Objective System (MUOS) (WPN Funding)	214.375	342.942	516.127
PE 0301376N: MUOS Ground Station Construction, (MILCON Funding)	8.450		

(U) D. ACQUISITION STRATEGY:

Concept Exploration contracts were awarded in early FY 2000 and completed in late FY 2001. Two Component Advancement Development (CAD) contracts were awarded in Q4 FY 2002. A Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 for the first two satellites, system engineering and associated ground infrastructure. Research Development Test & Evaluation, Navy (RDTEN) funds will be used to procure the first two satellites. Weapons Procurement, Navy (WPN) funds will be used to procure the remaining four satellites and launch services for all six satellites. Military Construction (MILCON) funds were required to prepare MUOS ground sites located in Sicily (Niscemi location), Virginia (Northwest location) and Hawaii (Wahiawa location).

Updates to the ground Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) terminals that support UFO on-orbit operations are included. RDTEN funds in the amount of \$1.987M in FY 2008 were used for UFO TT&C software and firmware development and procurement and installation of two prototype terminals. WPN funds in the amount of \$10.628M in FY 2008 and \$1.907M in FY 2009 will be used to procure and install UFO TT&C terminal updates.

Updates to the ground Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) terminals that support UFO on-orbit operations are included. RDTEN funds in the amount of \$1.987M in FY 2008 were used for UFO TT&C software and firmware development and procurement and installation of two prototype terminals. WPN funds in the amount of \$10.628M in FY 2008 and \$1.907M in FY 2009 used to procure and install UFO TT&C terminal updates.

Program Office initiated acquisition strategy and discussions with potential vendors capable of developing the Hosted Payload in FY 2009. The technology development, design and build efforts were planned for FY 2010. In February 2009, the Hosted Payload program was cancelled. The Navy determined the acquisition was not executable due to lack of full funding.

Studies are in progress to determine the most cost-effective, lowest risk path to implement legacy payload changes to mitigate any on-orbit losses of UHF capability and ensure continuity of legacy requirements. If studies result in identifying viable options to provide additional UHF capability, these efforts will need to be funded in FY10 for incorporation into the MUOS spacecraft's final assembly and integration for Flight 1 or Flight 2. With the cancellation of Hosted Payload, the FY10 funding provided in the PB09 PDM is a potential funding source for this additional legacy capability.

(U) F. METRICS:

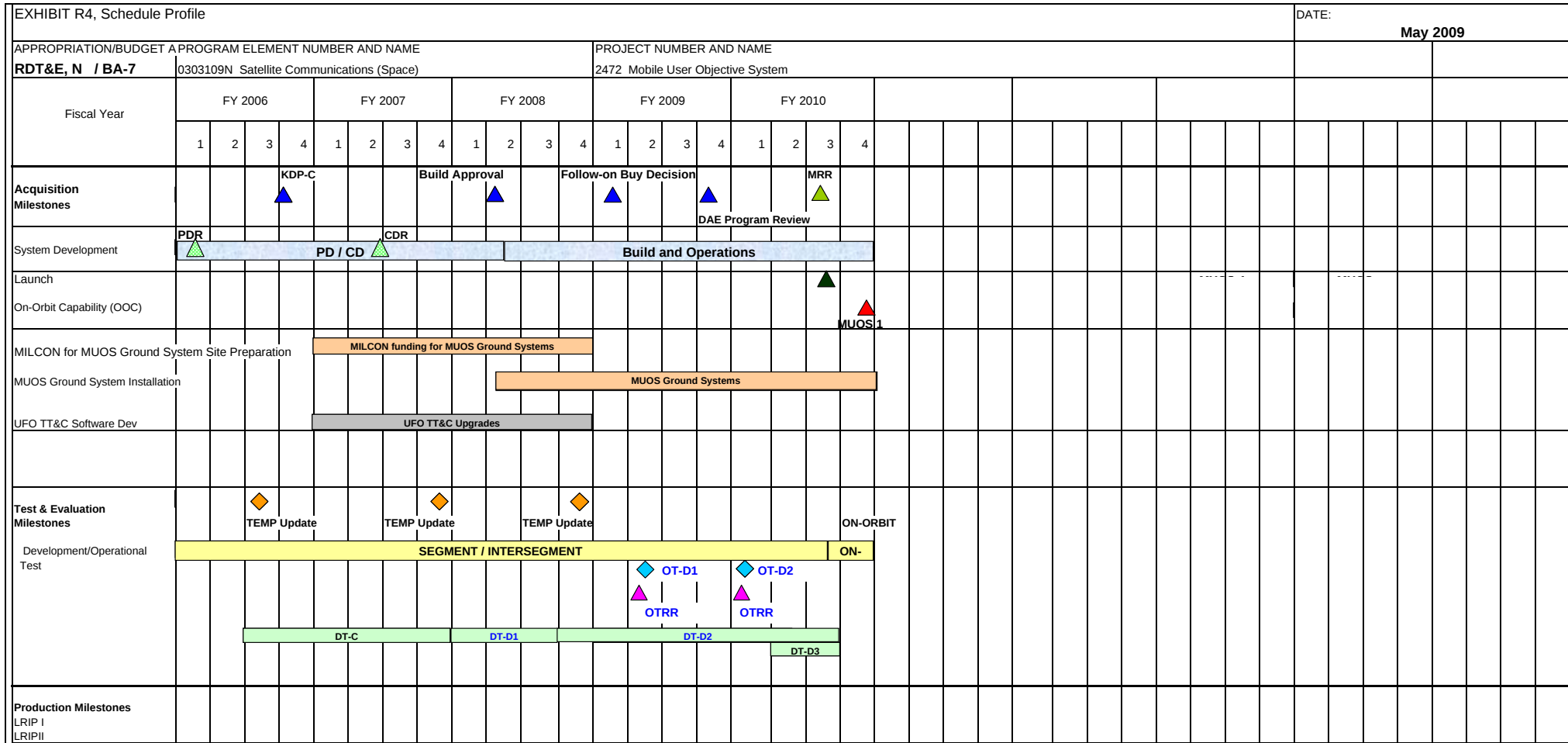
Earned Value Management (EVM) is used for metrics reporting and risk management.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION: UNCLASSIFIED											
Exhibit R-3 Cost Analysis								DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7				PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System				
	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date				
RRDD AOS Contract	CPAF/FPI	Lockheed Martin (LM)	1,941.852	482.591	1Q	340.261	1Q				
CE Contracts & Demos	FFP	LM / Raytheon / Spec Astro / Boeing	21.320								
CAD Contracts	FFP	LM / Raytheon	105.154								
AoA for MUOS	MIPR	Aerospace	2.782								
Government Studies	VAR	VAR	0.711								
Crypto Procurement	MIPR	NSA	3.703								
UHF Hosted Payload	TBD	TBD	0.000	2.996		32.384					
Subtotal Product Development			2,075.522	485.587		372.645					
Remarks:											
UFO TT&C Terminal Upgrades	VAR	VAR	10.591								
Facilities Modifications	VAR	VAR	2.020	0.209							
Australian Site Prep	FFP	Boeing	6.329	16.517							
Leased Lines	TBD	TBD	0.000	0.000		2.000					
Studies & Analyses (EELV)	MIPR	SMC/FMAIC	0.825								
ISCS Integration	WX	NAVSOC	6.198	0.589							
JTRS JTEL Testing	TBD	TBD									
Subtotal Support			25.963	17.315		2.000					
Remarks											
Note 1: Australia site prep funded with Research Development Test & Evaluation, Navy (RDTE&E). Site prep for the Niscemi, Wahiawa, and Northwest locations are all funded with Military Construction (MILCON) funds.											
Developmental Test & Evaluation	VAR	VAR	3.407	0.412		0.689					
Operational Test & Evaluation	VAR	VAR	2.195	0.348		0.450					
Live Fire Test & Evaluation											
Subtotal T&E			5.602	0.760		1.139					
Remarks											
Contractor Engineering Support	VAR	VAR	118.298	3.572		6.936					
Government Engineering Support	VAR	VAR	23.262	2.028		2.258					
Program Management Support	VAR	VAR	31.624	5.815		2.248					
Travel	VAR	VAR	2.022	0.200		0.200					
Frequency Filing	MD	ITU	0.855			0.100					
IPA/ICAT	VAR	VAR	0.390								
Subtotal Management			176.451	11.615		11.742					
Remarks											
Total Cost			2,283.538	515.278		387.526					
Remarks											

Exhibit R-3, RDTE&E Cost Analysis

CLASSIFICATION:



Change Descriptions:

- (1) As a result of loss of schedule margin and contractor cost over runs, an Over target baseline(OTB)/Over Target Schedule (OTS) was completed in February 2009. Launch and OOC dates for MUOS 1 has slipped six months in this new baseline schedule.
- (2) Mission Readiness Review (MRR) and On-Orbit Testing dates shifted as a result of changes cited in Note 1.
- (3) DAE Program Review added to obtain final authority to procure the remaining satellites.
- (4) Test events reflect the latest version of the TEMP.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail							DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 2472 Mobile User Objective System			
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010					
Preliminary Design (PD) Phase	1Q-4Q									
Test and Evaluation Master Plan (TEMP)	3Q	4Q	4Q							
Segment/Intersegment Testing	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q					
Preliminary Design Review (PDR)	1Q									
Key Decision Point (KDP) C	4Q									
Development Test (DT)-C	3Q-4Q	1Q-4Q								
Critical Design Review (CDR)		2Q								
Complete Design (CD) Phase	4Q	1Q-4Q	1Q-2Q							
UFO TT&C Terminal Upgrades		1Q-4Q	1Q-4Q							
DT-D1			1Q-4Q							
Build Approval			2Q							
Build and Operations Phase			2Q-4Q	1Q-4Q	1Q-4Q					
Operational Assessment (OT-D1)				2Q						
Operational Test Readiness Review (OTRR)				2Q	1Q					
DT-D2			4Q	1Q-4Q	1Q-4Q					
Follow-On Buy Decision				1Q						
DT-D3					2Q-4Q					
DT-D3 Tech Eval 1										
Mission Readiness Review (MRR)					3Q					
Operational Assessment (OT-D2)					1Q					
Launch of Satellite #1 (MUOS 1)					3Q					
On-Orbit Capability for Satellite #1 (MUOS 1)					4Q					
On-Orbit Testing					3Q-4Q					
OT-D3 Multi-Service Operational Testing & Evaluation (MOT&E 1)										
OT-D4 Multi-Service Operational Testing & Evaluation (MOT&E 2)										
Launch of Satellite #2 (MUOS 2)										
On-Orbit Capability for Satellite #2 (MUOS 2)										
DT-D4 Tech Eval 2										
DT-D4					4Q					
Follow-On Test Evaluation (FOT&E)										
Deployment Decision Review (DDR)										
Launch of Satellite #3 (MUOS 3)										
On-Orbit Capability for Satellite #3 (MUOS 3)										
Launch of Satellite #4 (MUOS 4)										
On-Orbit Capability for Satellite #4 (MUOS 4)										
Launch of Satellite #5 (MUOS 5)										
On-Orbit Capability for Satellite #5 (MUOS 5)										
Full Operational Capability (FOC)										

Exhibit R-4a, RDTEN Schedule Detail

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding					DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7		PROGRAM ELEMENT 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 2472 Mobile User Objective System			
Program Title	FY 2008	FY 2009	FY 2010					
2472 Mobile User Objective System (MUOS)	\$ 81.838	\$ 58.009	\$ 27.643					
Notes: 1) Values are in millions of dollars. 2) The Mobile User Objective System (MUOS) execution plan is dependent on termination liability funds being available for execution at the beginning of the following fiscal year. For example, termination liability funds for FY2008 are obligated at the beginning of FY2008, but are required for expenditure at the beginning of FY2009. (in October and November of CY 2008), assuming no termination occurs. 3) Termination values were obtained from the Contract Funds Status Report (CFSR), as of M/E December 2008(Feb 09 delivery), a contractually required deliverable on the Risk Reduction & Design Development (RRDD) contract. Non-cancellable commitments (NCC) are included in termination values.								

Exhibit R-5, Terminal Liability Funding for Major Defense Acquisition Programs

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)			PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		7.472	5.178	2.536				
RDT&E Articles Qty								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) The Navy Transformational Communications (NTC) terminal program provides for the development and production of terminals to provide high capacity, reliable, Anti-Jam/Low Probability of Intercept (AJ/LPI) communications capability to the fleet. Terminals will support multiple data streams over Q-band, Ka-band, and X-band. The terminals will also support mesh networking without the need for gateway terminals. Development will focus on a Local Area Network (LAN) to Antenna capability, including quality of service required for unique Navy missions. The Advanced Wideband System/Transformational Communications (AWS/TC) Program draft acquisition strategy consists of terminal suite development and environmental qualification, on-orbit testing, platform integration and test, software enhancements and regression testing throughout the life of the program. FY 2010 will be utilized for continued ASW/TC development.								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications		

(U) B. Accomplishments/Planned Program

	FY 2008	FY 2009	FY 2010	
AWS/TC Concept Development	7.472	5.178	2.536	
RDT&E Articles Quantity				

(U) Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of SATCOM-related program insertion.

(U) **FY 2008:** Reinitiated the system level engineering process previously started in FY06 to determine optimal tradeoffs between cost and performance. Mitigated COTS router and INFOSEC Module risks through MIT/Lincoln Labs and NMT contract risk reductions. Developed products to support the acquisition including a draft of the terminal suite acquisition specification flowdown, Acquisition Strategy Report (ASR) and other required Milestone (MS) B documentation, draft Capability Development Document (CDD), and the supporting products for release of a Transformational Satellite (TSAT) Terminal Request for Proposal (RFP) in 3Q FY 2010. Hardware products included the development of a prototype advanced Transmissions Security/Communications Security (TRANSEC/COMSEC) computer chip that will be required for the operation of every Navy TC terminal.

(U) **FY 2009:** Participate in Joint TSAT system and terminal development activities. Continue system level engineering process related to Navy TSAT Terminal development with space, TSAT Mission Operations System (TMOS), and joint service activities. Draft the Navy TSAT Terminal ICD, terminal specification, and remaining required MS A documentation. Prepare for 2Q FY 2011 MS A. Expect development of a prototype advanced TRANSEC/COMSEC computer chip required for the operation of every Navy TC terminal to progress to an Engineering Development Model (EDM) level.
Note: the NTC program has shifted from a M/S B to a M/S A entry due to new acquisition guidance.

(U) **FY 2010:** Ongoing participation & situational awareness efforts concerning Navy terminal and AF TSAT satellite developments. Develop draft CONOPS, (updated due to system changes) and other acquisition documentation needed to realize M/S A.

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications
(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A (U) D. ACQUISITION STRATEGY: System architecture is defined by the ongoing Transformational Communication Study. Acquisition documentation includes the development of a complete set of documentation required to support a MS A decision, including, but not limited to, a terminal specification, Statement of Work (SOW), Acquisition Strategy Report (ASR), and Source Selection Plan. (U) F. METRICS: Earned Value Management (EVM) will be used for metrics reporting and risk management.		

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE:

May 2009

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT

PROJECT NUMBER AND NAME

RDT&E, N / BA-7

0303109N Satellite Communications (Space)

9122 Advanced Wideband System / Transformational Communications

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various	39.619	1.918	10/08	0.750	10/09					
Systems Engineering	Various	Various	5.764	1.100	10/08	0.250	10/09					
Systems Engineering	WR	Various	4.418			0.450	10/09					
Subtotal Product Development			49.801	3.018		1.450						

Remarks:

Development Support	WR	Various	4.453	0.500	10/08	0.200	10/09					
Studies & Analyses	WR	Various	3.735			0.130	10/09					
Information Assurance	WR	Various	1.040	0.400	10/08	0.400	10/09					
Subtotal Support			9.228	0.900		0.730						

Remarks:

CLASSIFICATION:												
Exhibit R-3 Cost Analysis (page 2)								DATE:		May 2009		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E, N / BA-7				0303109N Satellite Communications (Space)			9122 Advanced Wideband System / Transformational Communications					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	FY 2011 Cost	FY 2011 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Subtotal T&E			0.000	0.000		0.000						
Remarks:												
Contractor Engineering Support		Various	0.349									
Program Management Support	Various	Various	1.922	0.500	10/08	0.100	10/09					
Acquisition Management Support			0.853	0.660	10/08	0.200	10/09					
Travel			0.318	0.100	10/08	0.056	10/09					
Subtotal Management			3.442	1.260		0.356						
Remarks:												
Total Cost			62.471	5.178		2.536						
Remarks:												

Exhibit R-3, RDTEN Cost Analysis

EXHIBIT R4, Schedule Profile		DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0303109N - Satellite Communications (Space)	PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Transformational Communications	

ACTIVITY	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
AIR FORCE SATELLITE MILESTONES												
CONTRACT ACTIVITIES												
TERMINAL SUITE DEVELOPMENT												
TESTING												
PRODUCTION												
DELIVERIES												

SDR: System Design Review
 PDR: Preliminary Design Review
 CDR: Critical Design Review
 RFP: Request for Proposal
 MS: Milestone
 AoA: Analysis of Alternatives

ENGAGE IN SPACE ACTIVITIES
 DOC PREP

Exhibit R-4, RD TEN Schedule Profile

CLASSIFICATION:								
EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY					PROJECT NUMBER AND NAME			
RDTE, N / BA-7		0303109N - Satellite Communications (Space)			9999 - Congressional Increases			
COST (\$ in Millions)		FY 2008	FY 2009	FY 2010				
Project Cost		4.055	0.797	0.000				
RDT&E Articles Qty _____								
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) Congressional adds for Satellite Communications								

Exhibit R-2a, RDTEN Project Justification

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 9999 - Congressional Increases		

(U) B. Accomplishments/Planned Program

Transformational Communications (TC) (9C75A)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishments/Effort/Subtotal Cost	1.542	0.000	0.000	0.000
RDT&E Articles Quantity				

(U) **FY 2008:** Accelerated insertion of superconductor digital-RF technology in naval MILSATCOM systems.

"Based ""Reconfigurable"" Wide Field of View Sensors (9C74A)	FY 2008	FY 2009	FY 2010	
Accomplishments/Effort/Subtotal Cost	1.546	0.000	0.000	
RDT&E Articles Quantity				

(U) FY 2008: Congressional Add for "Field Programmable Processor Array (FPPA) for Space Based "Reconfigurable" Wide Field of View Sensor". Demonstrated alternate reconfigurable technologies for ground segment processing of data provided from large format Focal Plane Arrays (FPAs). Established the applicability of reconfigurable technology to algorithms used for remote sensing missions (e.g., satellite altimetry, large format FPA data for space astrometry).

JIST-NET Systems (9421A)	FY 2008	FY 2009	FY 2010	FY 2011
Accomplishments/Effort/Subtotal Cost	0.967	0.797	0.000	0.000
RDT&E Articles Quantity				

(U) FY2008: Updated JIST-NET Version 3 Spiral 1. Provided updated Satellite Access Request (SAR) Module to incorporate Commercial SAR and Satellite Access Approval (SAA) capabilities into the module. Initiated Abbreviated Acquisition Program (AAP) designation documentation.

(U) FY2009: Complete development of JIST software (V3S2), hardware refresh and transition final JIST product to USSTRATCOM (includes training, shipping and initial set-up).

Exhibit R-2a, RDTEN Project Justification