CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February 2007**		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 7**				R-1 ITEM NOMENCLATURE 0303109N Satellite Communications (Space)				
COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	**527.432**	**748.416**	**736.572**	**736.485**	**425.140**	**190.084**	**171.430**	**166.275**
0728 EHF SATCOM Terminals	**51.792**	**82.388**	**107.805**	**122.108**	**84.141**	**17.470**	**17.773**	**18.085**
0731 Fleet Satellite Comm	**1.189**	**0.682**	**9.146**	**1.285**	**2.694**	**0.943**	**3.668**	**3.841**
2472 Mobile User Objective System	**449.467**	**662.407**	**611.569**	**602.824**	**295.936**	**117.457**	**60.449**	**48.419**
9122 Advanced Wideband System/Transformational Comm.	**19.227**	**0.000**	**8.052**	**10.268**	**42.369**	**54.214**	**89.540**	**95.930**
9999 Congressional Adds	**5.757**	**2.939**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Quantity of RDT&E Articles	**0**	**23**	**1**	**0**	**4**	**0**	**20**	**0**

(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 (A/J, 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 (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Gapfiller System (WGS) and Global Broadcast System (GBS) systems. The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System Operational Requirements Document (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 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 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. The FY 2008 funding supports joint services development with Defense Information Systems Agency (DISA) for Integrated Waveform Technology and software development into JMINI control system architecture. Effort will entail system prototyping, Developmental Testing (DT), and waveform compliance testing. 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.

CLASSIFICATION:		
EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2007**
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) 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.

(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. Prepare several test facilities and produce test events to determine applicability of IPv6 technologies to support the needs of operational Navy through Tactical Networks, Wireless Networks, and the forthcoming Computing and Network Enterprise System (CANES) networking program.

(U) 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 2008. The MUOS program is funded to the August 2004 Operational Requirements Document (ORD).

(U) This MUOS RDT&E effort supports an Under Secretary of the Air Force (USecAF) approved Initial Operational Capability (IOC) 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 Department of Defense Space Major Defense Acquisition Program. FY 2006-FY 2009 MUOS efforts are focused on Critical Design Review (CDR), beginning work on the spacecraft engineering development models, and fabrication, assembly, integration and test of the first two satellites. In addition, efforts will include the design, development, fielding and testing of the ground segment. The funding for FY 2007 and FY 2008 also includes software development for Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation, as well as the procurement and installation of two prototype terminals.

(U) The Navy Transformational Communications (TC) Terminal Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), Anti-Jam (AJ), 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 Navy unique missions. 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) 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 Program Executive Office for Command, Control, Communications, Computers, Intelligence and Space (PEO C4I & Space) 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.

(U) The Covert Communications Information Transfer (CCIT) program addresses the evolving special communication requirements of Naval Special Warfare and Expeditionary Force missions including covert communications required for operational utilization. FY 2006 further refined candidate technologies into modular, scalable, deployable CCIT capabilities deployed to Special Operations Forces.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	**BA 7**	0303109N Satellite Communications (Space)

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2006	FY 2007	FY 2008	FY 2009
FY 2007 President's Budget	539.489	748.662	711.916	588.057
FY 2008/2009 President's Budget	527.432	748.416	736.572	736.485
Total Adjustments	-12.057	-0.246	24.656	148.428
Summary of Adjustments				
NAVY IPV6 adjustments			-0.891	-0.907
OSD directed MUOS risk mitigation				126.110
Support IW and extend JMINI Control System			8.100	0.374
Realign Navy Multiband Terminal (NMT) funding			11.470	10.143
Rebaseline Transformational Communication			8.000	9.400
Extension and transition of Commercial SATCOM			6.000	4.900
Navy Working Capital Fund (NWCF) Rate Adjustments			0.259	0.234
Pricing				4.344
DISA Functional Transfers			0.115	0.002
Alternative Offset for New Triad-DNC2				-1.014
NetCentricity -DCJ2				-4.680
Realignment of funding to MILCON			-6.200	
Fixed Submarine Broadcast System (FSBF) Unfunded			-2.000	
Sec. 8023: Federally Funded R&D Center		-0.359		
Joint Integrated Systems For Advanced Digital Networking (JIST-NET)		1.950		
Internet Protocol Version 6 Transition Planning Laboratory		1.000		
Miscellaneous Navy Adjustments	2.633			-0.610
Small Business Innovation Research (SBIR) Tax	-14.675			
Federal Techology Transfer Tax	-0.015			
Non-Purchase Inflation Adjustment			-0.224	0.132
Sec. 8106: Revised Economic Assumptions		-2.837		
Subtotal	-12.057	-0.246	24.629	148.428

(U) Schedule:

EHF SATCOM Terminals (project 0728) - System Design and Development (SDD) contract award Oct 2003. Required Acquisition Strategy Report (ASR) approved June 2002, and ASR Update approved July 2003. Schedule development effort to support the additional Software Communication Architecture (SCA) scope and cost are incorporated into the program baseline. NMT funding profile adjustment required the prototype phase to be extended an additional 6 months. Competitive down select currently scheduled for June 2007.
Fleet Satellite Comm. (project 0731) - No schedule changes
Mobile User Objective System (project 02472)
Advanced Wideband System/Transformational Communications (project 9122) - Program Office began Acquisition Strategy development and refinement in FY 2004. Milestone B is currently projected in FY 2010.

(U) Technical:

No technical changes

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME		
RDT&E, N / BA-7	0303109N Satellite Communications (Space)				0728 EHF SATCOM Terminals		

COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	51.792	82.388	107.805	122.108	84.141	17.470	17.773	18.085
RDT&E Articles Qty		20						

(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 (A/J/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 (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Gapfiller Satellite (WGS) and Global Broadcast Systems (GBS). The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System Operational Requirement Document (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 New-Start Commercial SATCOM terminal will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial Off the Shelf (COTS) terminals and commercial satellite land earth stations and terrestrial fiber services.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
New-Start Commercial Terminal	0.000	0.000	4.022	4.941
RDT&E Articles Quantity				

(U) New-Start Commercial Terminal
(U) **FY 2008:** 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), Information Support Plan (ISP), Market research, Engineering studies.
(U) **FY 2009**: Complete development of Acquisition Documentation and begin development Request For Proposal (RFP).

	FY 2006	FY 2007	FY 2008	FY 2009
NMT Development, First & Second Phases	51.341	82.388	103.783	117.167
RDT&E Articles Quantity		20		

(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 2006:** Continued NMT hardware and software development of 8 Software Communications Architecture (SCA) compliant prototype terminals. Continued high level test plan. Additional Software Development required to ensure legacy equipment, utilized by NMT program, will meet Advanced Extremely High Frequency (AEHF) Satellite System requirements.
(U) **FY 2007**: Complete terminal hardware and software development for 8 SCA compliant NMT prototypes. Perform over-the-air testing of NMT prototypes and conduc vendor down-select. Commence design and development of 20 Q/Ka capable Engineering Development Models (EDMs) and added X-band for submarine platforms. EDM test sets are required at the following sites: one set at contractor facility for testing, one set shared between East/West coast government facilities for program and joint interoperability testing, and one set for operational assessment on platforms. Each set is composed of two ship, one sub, and one shore terminal configurations. Ir addition, eight EDMs are planned as 1st of class platform installations for unique environmental testing and production phase risk reduction.
(U) **FY 2008**: Continue design and development of 20 Q/Ka capable EDMs, added X-band for submarine and X/Ka kits for ships. Additional security measures will be incorporated into the terminal software and hardware to support DoD Information Technology Security Certification and Accreditation Process (DITSCAP) certification prior to EDM fielding for DT/OT.
(U) **FY 2009**: Complete design and development of 20 Q/Ka capable EDMs and added X-band 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 or ship and submarine platforms and a shore site to support DT/OT and preparations for MS C.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
Extremely High Frequency (EHF) Polar	0.451	0.000	0.000	0.000
RDT&E Articles Quantity				

(U) EHF POLAR / Ultra High Frequency (UHF) Follow On (UFO)-11 software development and systems engineering.
(U) **FY 2006**: Continued development of Tracking, Telemetry and Control (TT&C) subsystems and end-to-end system testing for Polar 2/3 system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0728 EHF SATCOM Terminals

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3215 - OPN Ship and Shore	20.644	-	27.000	27.561	106.077	197.105	198.301	199.676
NESP	20.644							
NMT *					86.077	184.005	188.301	191.776
New-Start Commercial Terminal			27.000	27.561	20.000	13.100	10.000	7.900

(U) Related RDT&E:

(U) PE 0303603F, MILSTAR

(U) PE 0303601F, Air Force Satellite Communications

(U) D. ACQUISITION STRATEGY:

(U) Navy Multiband Terminal (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 one vendor will occur for the development, demonstration and procurement of twenty 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) The new-Start Commercial SATCOM terminal will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial Off the Shelf (COTS) terminals and commercial satellite land earth stations and terrestrial fiber services. Acquisition documentation development, concept studies and analyses will be accomplished using existing contracts. No new competitive or sole source contracts required for COTS systems.

(U) E. MAJOR PERFORMERS:

Harris Corp., Melbourne, FL - NMT SDD Vendor; contract awarded Oct. 03
Raytheon, Marlborough, MA - NMT SDD Vendor; contract awarded Oct. 03
Naval Undersea Warfare Center (NUWC), Newport, RI - NMT Technical Director; annual WX document

(U) F. METRICS:

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

* Funds not reflected in 3215 budget submit because funding, FY 2010-2013, is outside of the budget submit

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2007**

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 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	CPAF	Various	138.313	51.202	11/06	0.199	10/07	0.150	10/08			
Hardware Development	C/FFP	Harris (Melbourne, FL)	6.551									
NMT EDM Development	TBD	TBD		19.669	06/07	88.766	10/07	100.817	10/08	Continuing	Continuing	
Hardware Development	WR	SSC SD (San Diego, CA)	1.077									
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									
Software Development	WR	Various				0.133	10/07	0.100	10/08			
Systems Engineering	WR	SSC SD (San Diego, CA)	14.169			0.100	10/07	0.200	10/08			
Systems Engineering	WR	NUWC (Newport, RI)	7.345	1.723	10/06	2.247	10/07	2.426	10/08	Continuing	Continuing	
Systems Engineering	Various	Various	12.376	2.867	10/06	4.067	10/07	4.353	10/08	Continuing	Continuing	
GFE	Various	Various	10.114	0.351	10/06	1.640	10/07	0.050	10/08	Continuing	Continuing	
Subtotal Product Development			260.588	75.812		97.152		108.096		Continuing	Continuing	

Remarks:

Development Support	WR	Various	7.504			0.133	10/07	2.000	10/08	Continuing	Continuing	
Logistics Support	Various	Various				1.000	10/07	1.021	10/08	Continuing	Continuing	
Studies & Analysis	WR	Various	6.126	0.500	10/06	0.350	10/07	0.243	10/08	Continuing	Continuing	
Information Assurance	Various	Various	1.409	0.340	10/06	0.904	10/07	0.961	10/08	Continuing	Continuing	
Subtotal Support			15.039	0.840		2.387		4.225		Continuing	Continuing	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

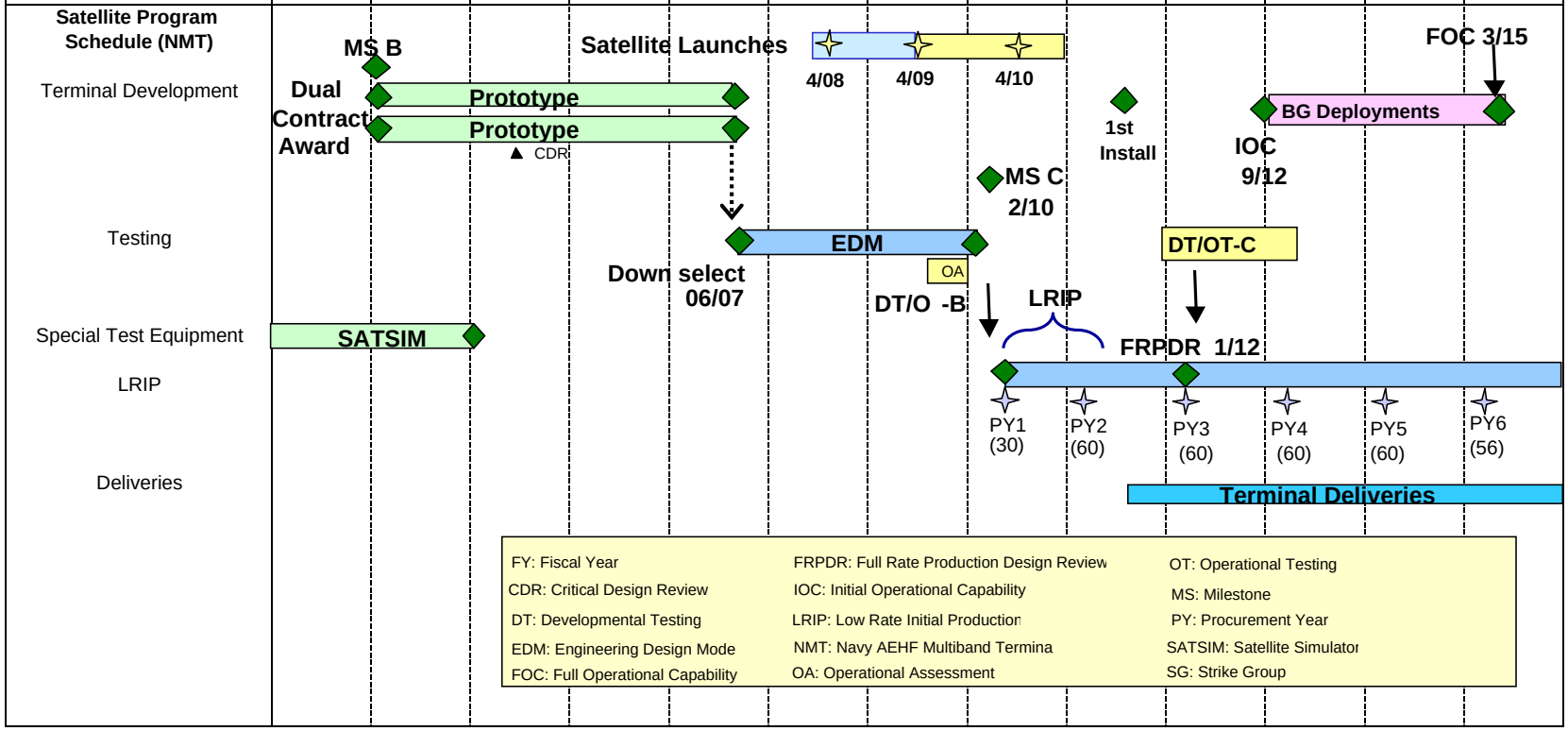
PROGRAM ELEMENT: 0303109N Satellite Communications (Space)

PROJECT NUMBER AND NAME: 0728 EHF SATCOM Terminals

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC SD	10.787	0.659	10/06	0.655	10/07	1.145	10/08	Continuing	Continuing	
Operational Test & Evaluation	WR	Various	0.556					1.000	10/08	Continuing	Continuing	
Subtotal T&E			11.343	0.659		0.655		2.145		Continuing	Continuing	
Remarks:												
Contract Management	Various	Various	4.109	0.737	10/06	1.039	10/07	1.210	10/08	Continuing	Continuing	
Program Management	Various	Various	6.252	2.843	10/06	2.943	10/07	3.292	10/08	Continuing	Continuing	
Acquisition Management	Various	Various		1.391	10/06	3.461	10/07	2.640	10/08	Continuing	Continuing	
Acquisition Management	WR	NCAD						0.300	10/08			
Travel		Gov't Travel	0.314	0.106	10/06	0.167	10/07	0.200	10/08	Continuing	Continuing	
Subtotal Management			10.675	5.077		7.610		7.642		Continuing	Continuing	
Remarks:												
Total Cost			297.645	82.388		107.805		122.108		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	DATE: February 2007	
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



Note:
Reflects development of 20 Engineering Development Models (EDMs)
Production Quantity includes 19 SCN platforms (2 of the PY2 buy are SCN procurements)

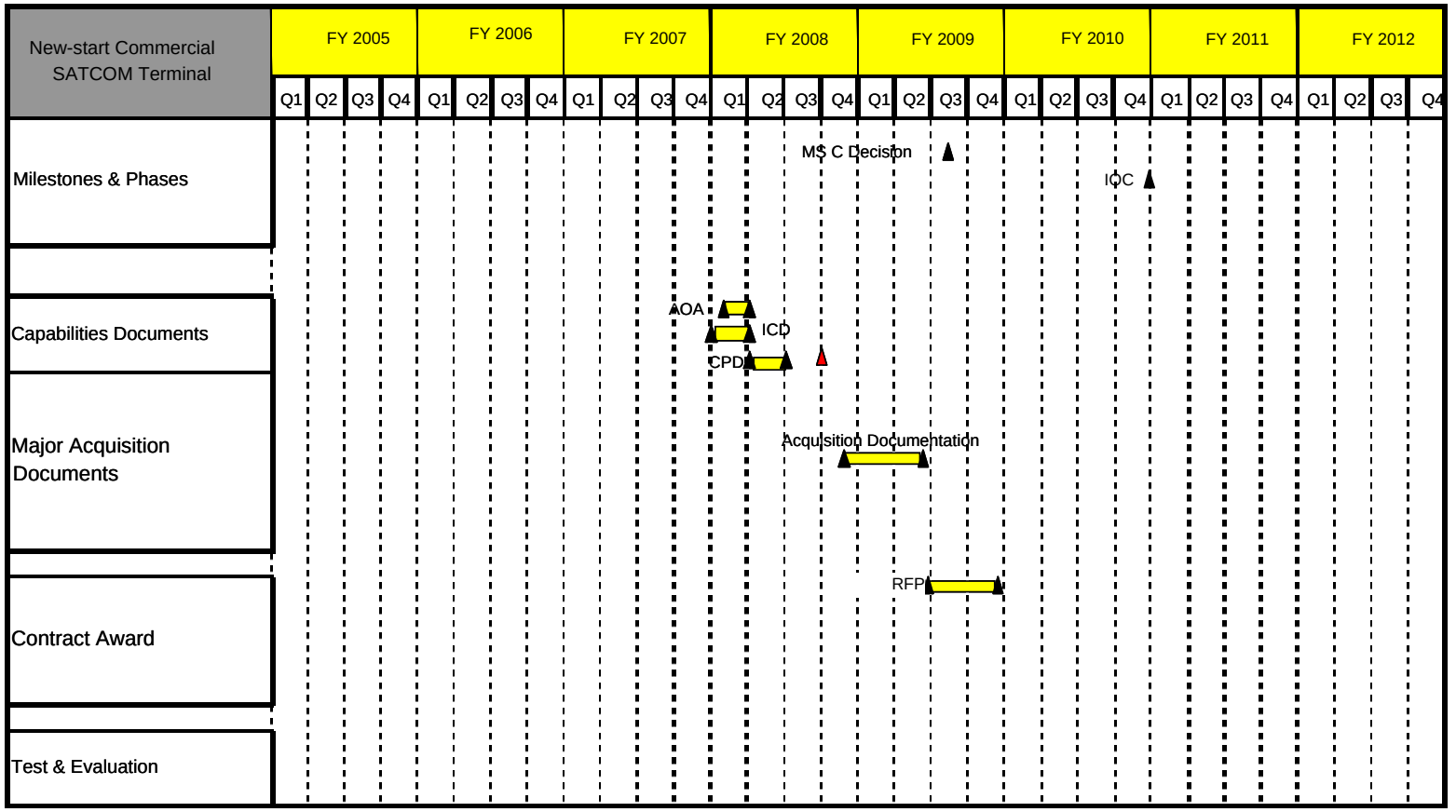
CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2007**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 7**	PROGRAM ELEMENT 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone B								
Dual Contract Award								
Prototype Complete		3Q						
Engineering Development Model (EDM) Begins (Quantity = 20)		3Q						
Developmental Testing				4Q				
Operational Assessment				4Q				
Milestone C					2Q			
Start Low-Rate Initial Production I (LRIP I)					2Q			
Start Low-Rate Initial Production II						1Q		
Low-Rate Initial Production I Delivery						2Q		
Developmental Testing							1Q	
Operational Testing							2Q	
Full Rate Production Decision Review (FRPDR)							2Q	
Initial Operational Capability (IOC)							4Q	
Full Operational Capability (FOC) (NOTE 1)								

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

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	DATE: **February 2007**	
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



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2007**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 7**	PROGRAM ELEMENT 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME 0728 EHF SATCOM Terminals			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone C				3Q				
IOC					4Q			
Capabilities Documentation - AOA			1Q					
Capabilities Documentation - ICD			1Q					
Capabilities Documentation - CPD			2Q					
Acquisition Documentation Process Begins			4Q					
Acquisition Documentation Process Ends				2Q				
Contract Award - RFP Begins				2Q				
Contract Award - RFP Ends				4Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm	

COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	**1.189**	**0.682**	**9.146**	**1.285**	**2.694**	**0.943**	**3.668**	**3.841**
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. This requires mandatory implementation into JMINI Control System. The FY 2008 funding supports joint services development with Defense Information Systems Agency (DISA) for Integrated Waveform Technology and software development into JMINI control system architecture. Effort will entail system prototyping, Developmental Testing (DT), and waveform compliance testing. 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.

(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.

(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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm	

(U) B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
JMINI IW Development			8.265	0.384
RDT&E Articles Quantity				

(U) FY 2006: N/A

(U) FY 2007: N/A

(U) FY 2008: The FY08 funding supports 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 will entail system prototyping, Developmental Testing (DT) and waveform compliance testing.

(U) FY 2009: Start development of next JMINI control system to replace non-supported equipment, reduce system components, support tech insertion and system re-architecture.

	FY 2006	FY 2007	FY 2008	FY 2009
SCI Networks	1.189	0.682	0.695	0.706
RDT&E Articles Quantity				

(U) FY 2006: Integrated and implemented SCI Networks and associated Special Intelligence Communications. Development Test/Observation of Operational Capability (DT/OOC) of AN/USQ-148E(V)2, and developed and integrated COMPOSE 3.0 software. IPv6 integration and laboratory tests completed. Lab DT of AN/USQ-148D(V)2. Integrated and tested of Voice over Internet Protocol (VoIP).

(U) FY 2007: Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. DT/OOC of AN/USQ-148D(V)2. Integration and testing of COMPOSE 3.0 with AN/USQ-148D(V)2.

(U) FY 2008: Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. Begin development and integration of the consolidated afloat networks architecture with Common PC Operating System Environment (COMPOSE) 4.X software. Perform Sub DT.

(U) FY 2009: Continue integration and implementation of SCI Networks and associated Special Intelligence Communications. Conduct Follow-on Test and Evaluation (FOT&E) of COMPOSE 4.X software.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm

(U) B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
IPv6 Transition			0.186	0.195
RDT&E Articles Quantity				

(U) FY 2006: N/A

(U) FY 2007: N/A

(U) FY 2008: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products for FY 2008 will include planning and Test & Evaluation (T&E) documentation required to support acquisition programs identified as critical IPv6 elements. Additionally, these funds will be 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 support

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA-7**	0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
OPN - Comm Auto - 3050 - SCI NETWORKS	4.987	23.048	17.461	14.87	10.143	9.451	5.42	5.507	Continuing	Continuing
OPN - Sat Comm - 3215 - JMINI			0.160	2.846	0.225	8.459	0.622	0	0	12.312

(U) D. ACQUISITION STRATEGY:

JMINI: The JMINI upgrades will be comprised of software and hardware development for channel controller for integration into the RT-1771 terminal replacement. The effort will commence at Milestone (MS) B in FY 2009. Development Test and Evaluation (DT&E) testing will be conducted in existing laboratory environment to ensure software maturity prior to Operational Test and Evaluation (OT&E) planned in 4Q FY 2011.

SCI Networks: SCI Network variants are comprised of Commercial Off the Shelf equipments and Government Off the Shelf 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.

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.

(U) E. Major Performers:

JMINI: TBD

SCI Networks: SPAWAR Systems Center, San Diego (SSC SD) provides research and development for next generation SCI Networks.

IPv6: SSC SD/ SPAWAR Systems Center, Charleston (SSC CH)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: 0303109N Satellite Communications (Space) | PROJECT NUMBER AND NAME: 0731 Fleet Satellite Comm

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	22.663								22.663	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering	WX	SSC SD		0.541	12/06	0.553	12/07	0.564	12/08	Continuing	Continuing	0.000
Systems Engineering	Various	Various	0.000	0.000	Various	0.000		0.270	Various	Continuing	Continuing	0.000
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			22.663	0.541		0.553		0.834		Continuing	Continuing	0.000

Remarks:

Development Support	MP	JITC		0.064	12/06	0.065	12/07	0.065	12/08	Continuing	Continuing	0.000
Software Development	WX	DISA	0.000	0.000	Various	8.265	11/07	0.000	Various	Continuing	Continuing	0.000
Training Development											0.000	0.000
IPv6 Support	WX	SSC CH/SD	0.000	0.000	Various	0.186	Various	0.195	Various	Continuing	Continuing	0.000
Integrated Logistics Support											0.000	0.000
Configuration Management											0.000	0.000
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	0.064		8.516		0.260		Continuing	Continuing	0.000

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: 0303109N Satellite Communications (Space) | PROJECT NUMBER AND NAME: 0731 Fleet Satellite Comm

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	OPTEVFOR		0.018	12/06	0.018	12/07	0.018	12/08	Continuing	Continuing	0.000
Operational Test & Evaluation											0.000	0.000
Live Fire Test & Evaluation											0.000	0.000
Test Assets											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Subtotal T&E			0.000	0.018		0.018		0.018		Continuing	Continuing	0.000
Remarks:												
Contractor Engineering Support	Various	Various		0.059	Various	0.059	Various	0.059	Various	Continuing	Continuing	0.000
Government Engineering Support											0.000	0.000
Program Management Support	Various	Various	0.000	0.000	Various	0.000	Various	0.114	Various	Continuing	Continuing	0.000
Travel											0.000	0.000
Subtotal Management			0.000	0.059		0.059		0.173		Continuing	Continuing	0.000
Remarks:												
Total Cost			22.663	0.682		9.146		1.285		Continuing	Continuing	0.000
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0303109N Satellite Communications (Space)	PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm - JMINI	

Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																MS B						MS C/FRPDR		IOC			FOC					
Software Deliveries																				JMINI software delivery												
Test & Evaluation Milestones																																
Development Test (MS B)																	Contract Award				DT/OT											
Operational Test (MS B)																						JITC Cert										
Production Milestones																							Contract Award	LANT/PAC Install		Naples/Guam Install						
Deliveries																																

Note:
This schedule profile is for JMINI only

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2007**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 7**	PROGRAM ELEMENT 0303109N Satellite Communications (Space)					PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm - JMINI		
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone B (MS B)				4Q				
Contract Award					1Q			
Developmental Testing (MS B)						1Q		
Software Delivery						1Q		
Operational Testing (Platform Operational Assessment) (MS B)						1Q		
Milestone C (MS C)						2Q		
Full Rate Production Decision Review (FRPDR)						2Q		
JITC Cert						2Q		
Install - LANT/PAC/Naples/Guam						4Q	2Q	
Initial Operational Capability (IOC)						4Q		
Full Operational Capability (FOC)							3Q	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / **BA-7**	0303109N Satellite Communications (Space)	0731 Fleet Satellite Comm (SCI Networks)	

Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12
Acquisition Milestones	△ Post MS C 148D/E PM Memo																															
Prototype Phase																																
System Development Submarine/BCA AN/USQ-148E AN/USQ 148D	▬	▬	▬	▬																												
Equipment Delivery AN/USQ 148D																																
Software SW Delivery			2.X △				3.0 △		4.X △											5.X △												
Test & Evaluation Milestones			Lab DT 148D						Lab DT 4.X			Ship/Sub/Shore DT 4.X								Lab DT 5.X												
Development Test			▬	▬				▬															▬	▬								
Operational Test			Ship/Shore DT/OOC 148E				Ship/Shore DT/OOC 148D				Sub DT				▬									Ship/Sub/Shore DT 5.X									
															Ship/Sub/Shore FOT&E 4.X																		
Production Milestones																																
LRIP I																																
LRIPII																																
FRP																																
Deliveries																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2007**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA - 7**	PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 0731 Fleet Satellite Comm (SCI Networks)			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Post MS C 148D/E PM Memo	1Q							
System Development (AN/USQ-148D)	1Q-4Q							
Software Delivery 2.X	3Q							
Software Delivery 3.0		3Q						
Software Delivery 4.X			1Q					
Software Delivery 5.X					4Q			
Development Test - Ship/Shore DT/OOC 148E	3Q							
Development Test - Lab DT 148D	4Q							
Development Test - Ship/Shore DT/OOC 148D		4Q						
Development Test - Lab DT 4.X			2Q					
Development Test - Sub DT			3Q					
Development Test - Ship/Sub/Shore DT 4.X			4Q					
Development Test - Lab DT 5.X						1Q		
Development Test - Ship/Sub/Shore DT 5.X						3Q		
Operational Test - Ship/Sub/Shore FOT&E 4.X				2Q				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2007**
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			

COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	449.467	662.407	611.569	602.824	295.936	117.457	60.449	48.419
RDT&E Articles Qty (MUOS Satellites)		1	1					
RDT&E Articles Qty (UFO TT&C Terminals)		2						

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) 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 2008. The MUOS program is funded to the August 2004 Operational Requirements Document (ORD).

(U) This MUOS Research Development Test & Evaluation (RDT&E) effort supports an Under Secretary Air Force (USecAF) approved Initial Operational Capability (IOC) 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 Department of Defense Space Major Defense Acquisition Program. FY 2006-FY 2009 MUOS efforts are focused on Critical Design Review (CDR), beginning work on the spacecraft engineering development models, and fabrication, assembly, integration and test of the first two satellites. In addition, efforts will include the design, development, fielding and testing of the ground segment.

(U) The funding for FY 2007 and FY 2008 also includes software development for Ultra-High Frequency (UHF) Follow-On (UFO) Telemetry, Tracking and Command (TT&C) Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation, as well as the procurement and installation of two prototype terminals.

(U) The 2008 President's Budget effect an OSD-directed net increase of $126.11M in FY 2009. This increase was a result of direction from the MUOS Milestone Decision Authority (MDA) to fund the program to the OSD Cost and Analysis Improvement Group's (CAIG) estimate. This increase reflects the critical need for the MOUS system to remain on schedule as the preceding UFO system is rapidly degrading. These funds will be used for risk mitigation on the first two satellites. In addition, FY 2009 WPN - where the launch vehicle and remaining satellites are funded - reflects a corresponding OSD-directed net decrease of $180M.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
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) B. Accomplishments/Planned Program

MUOS	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Accomplishments/Effort/Subtotal Cost	449.467	651.907	609.069	602.824
RDT&E Articles Quantity		1	1	

(U) FY 2006: Continued funding MUOS RRDD contract and associated system engineering tasks in order to accomplish all FY06 Critical Design Review (CDR) tasks, a necessary condition to meet Initial Operational Capability (IOC) in 2010.
(U) FY 2007: Continue funding for MUOS RRDD contract to complete CDR. Begin work on spacecraft engineering development models and fabrication, assembly, integration and test of the first two satellites.
(U) FY 2008: Continue work on fabrication, assembly, integration and test of the first two satellites. In addition, design and develop entire ground segment and begin fielding and testing.
(U) FY 2009: Continue work on fabrication, assembly, integration and test of the first two satellites. In addition, finish fielding and testing entire ground segment.

UFO TT&C Terminal Upgrades	**FY 2006**	**FY 2007**	**FY 2008**	**FY 2009**
Accomplishments/Effort/Subtotal Cost	0.000	10.500	2.500	0.000
RDT&E Articles Quantity		2		

(U) FY 2007: Begin software development for UFO TT&C Terminal upgrades due to parts obsolescence, advanced planning, and engineering for the terminal installation, as well as procurement and installation of two prototype terminals.
(U) FY 2008: Continue efforts associated with TT&C prototype terminals procurement and installations.

	FY 2006	**FY 2007**	**FY 2008**	**FY 2009**
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
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:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
*BLI 2433: Mobile User Objective System (WPN Funding)	0	0	215.834	330.060	529.897	522.497	225.392	70.915	819.633	2,714.228
PE 0301376N: MUOS Ground Station Construction, (MILCON Funding)		26.071	8.450							34.521

(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 (RDT&E) 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 are 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. RDT&E funds in the amount of $10.5M in FY 2007 and $2.5M in FY 2008 will be used for UFO TT&C software and firmware development and procurement and installation of two prototype terminals. WPN funds in the amount of $10.7M in FY 2008 and $2M in FY 2009 will be used to procure and install UFO TT&C terminal updates.

(U) E. MAJOR PERFORMERS:

Lockheed Martin

(U) F. METRICS:

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

CLASSIFICATION: UNCLASSIFIED

Exhibit R-3 Cost Analysis

DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	2472 Mobile User Objective System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RRDD AOS Contract (Note 1)	CPAF/FPI	Lockheed Martin (LM)	$ 797.305	$ 601.294	1Q	$ 568.419	1Q	$ 569.924	1Q	$ 597.032	$ 3,133.974	$ 3,133.974
CE Contracts & Demos	FFP	LM / Raytheon / Spec Astro / Boeing	$ 21.320								$ 21.320	$ 21.320
CAD Contracts	FFP	LM / Raytheon	$ 105.154								$ 105.154	$ 105.154
AoA for MUOS	MIPR	Aerospace	$ 2.782								$ 2.782	$ 2.782
Government Studies	VAR	VAR	$ 0.711								$ 0.711	$ 0.711
Crypto Procurement	MIPR	NSA	$ 2.060	$ 0.100		$ 0.500		$ -		$ -	$ 2.660	$ 2.660
Subtotal Product Development			$ 929.332	$ 601.394		$ 568.919		$ 569.924		$ 597.032	$ 3,266.601	$ 3,266.601
Remarks:												
UFO TT&C Terminal Upgrades	VAR	VAR	$ -	$ 10.500		$ 2.500		$ -		$ -	$ 13.000	
Facilities Modifications	VAR	VAR	$ 1.341	$ 5.927	Note 2	$ 2.500		$ -		$ -	$ 9.768	
Leased Lines	TBD	TBD	$ -	$ -		$ 2.000		$ 6.000		$ -	$ 8.000	
Studies & Analyses (EELV)	MIPR	SMC/FMAIC	$ 0.500	$ 0.500		$ -		$ -		$ -	$ 1.000	
ISCS Integration	WX	NAVSOC	$ 1.103	$ 2.000		$ 2.250		$ 2.500		$ 1.000	$ 8.853	
JTRS JTEL Testing	TBD	TBD	$ -	$ -		$ 2.500		$ 1.500		$ -	$ 4.000	
Subtotal Support			$ 2.944	$ 18.927		$ 11.750		$ 10.000		$ 1.000	$ 44.621	$ -
Remarks Note 2: FY07 Facility Mods funding of $5.559M is for Australia site prep. Site prep for the Niscemi, Wahiawa, and Northwest locations are all funded with MILCON.												
Developmental Test & Evaluation	VAR	VAR	$ 1.910	$ 0.824		$ 0.673		$ 0.412		$ 1.523	$ 5.342	
Operational Test & Evaluation	VAR	VAR	$ 0.720	$ 0.709		$ 0.800		$ 1.000		$ 12.127	$ 15.356	
Live Fire Test & Evaluation			$ -			$ -				$ -	$ -	
Subtotal T&E			$ 2.630	$ 1.533		$ 1.473		$ 1.412		$ 13.650	$ 20.698	$ -
Remarks												
Contractor Engineering Support	VAR	VAR	$ 73.462	$ 23.717		$ 16.971		$ 11.151		$ 53.004	$ 178.305	
Government Engineering Support	VAR	VAR	$ 14.814	$ 6.417		$ 4.591		$ 3.017		$ 14.340	$ 43.179	
Program Management Support	VAR	VAR	$ 19.019	$ 9.819		$ 5.965		$ 3.920		$ 18.633	$ 57.356	
Travel	VAR	VAR	$ 1.082	$ 0.400		$ 0.400		$ 0.400		$ 1.600	$ 3.882	
Frequency Filing	ITU	MD	$ 0.855	$ -		$ 1.500		$ 3.000		$ 1.000	$ 6.355	
IPA/ICAT	VAR	VAR	$ 0.124	$ 0.200		$ -		$ -		$ -	$ 0.324	
Subtotal Management			$ 109.356	$ 40.553		$ 29.427		$ 21.488		$ 88.577	$ 289.401	$ -
Remarks												
Total Cost			$ 1,044.262	$ 662.407		$ 611.569		$ 602.824		$ 700.259	$ 3,621.321	$ 3,266.601
Remarks												

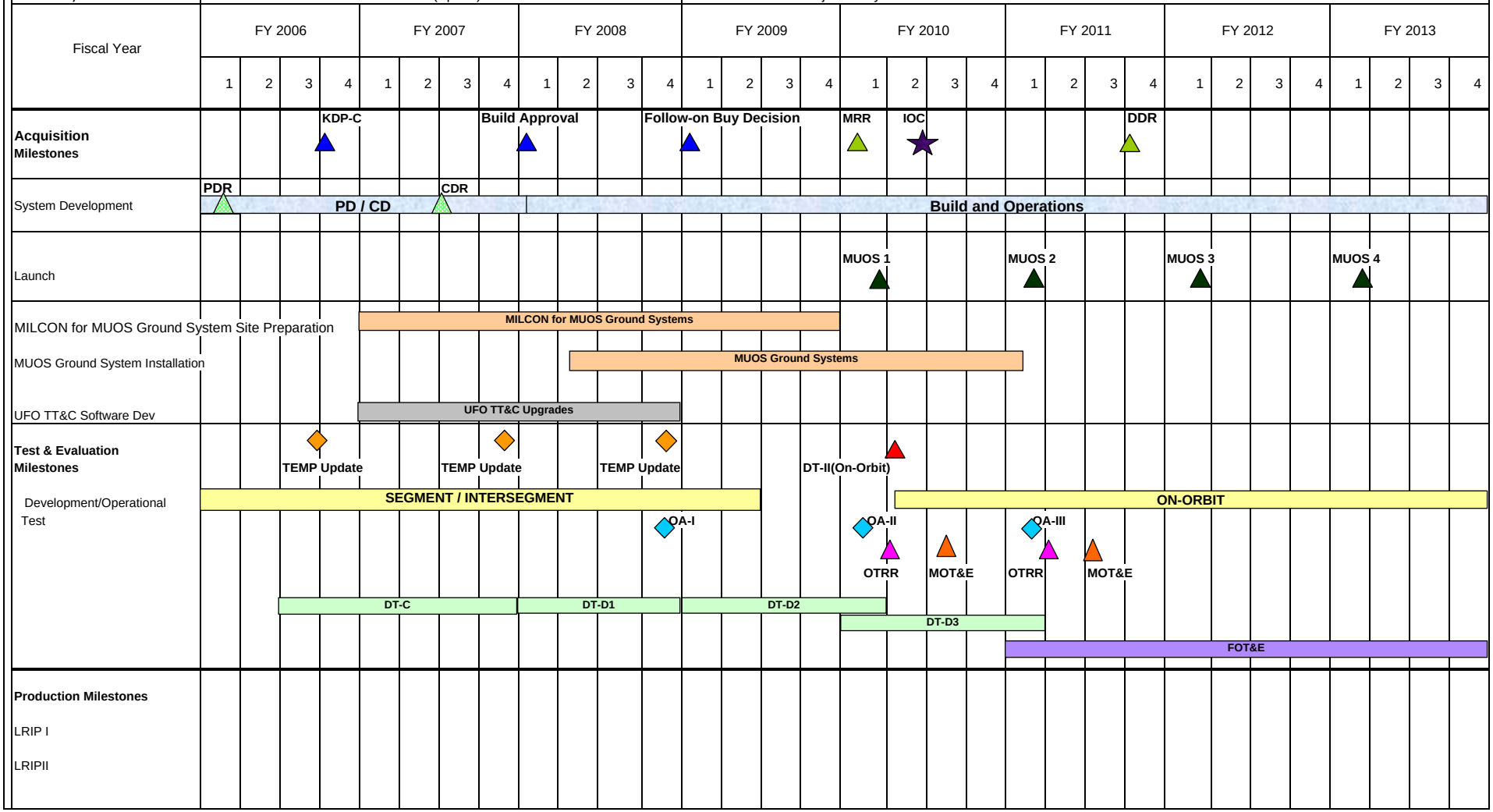
CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2007**

APPROPRIATION/BUDGET A: **RDT&E, N /**

PROGRAM ELEMENT NUMBER AND NAME: 0303109N Satellite Communications (Space)

PROJECT NUMBER AND NAME: 2472 - Mobile User Objective System



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2007**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0303109N Satellite Communications (Space)				PROJECT NUMBER AND NAME 2472 Mobile User Objective System			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
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-2Q				
Preliminary Design Review (PDR)	1Q							
Key Decision Point C	4Q							
Development Test (DT)-C	3Q-4Q	1Q-4Q						
Critical Design Review (CDR)		3Q						
Complete Design (CD) Phase	4Q	1Q-4Q	1Q					
UFO TT&C Terminal Upgrades		1Q-4Q	1Q-4Q					
DT-D1			1Q-4Q					
Build Approval			1Q					
Build and Operations Phase			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
MUOS Ground Systems Site Prep and Installation		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Operational Assessment (OA-1)			4Q					
Operational Test Readiness Review (OTRR)					2Q	2Q		
DT-D2				1Q-4Q	1Q			
Follow-On Buy Decision				1Q				
DT-D3					1Q-4Q	1Q		
Developmental Testing (DT-II) (On Orbit)					2Q			
Mission Readiness Review (MRR)					1Q			
Operational Assessment (OA-II)					1Q			
Launch 1 (M1)					1Q			
Initial Operational Capability (IOC)					2Q			
On-Orbit Testing					2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Multi-Service Operational Testing & Evaluation (MOT&E)					3Q	3Q		
Launch 2 (M2)						1Q		
Operational Assessment (OA-III)						1Q		
Follow-On Test Evaluation (FOT&E)						1Q-4Q	1Q-4Q	1Q-4Q
Deployment Decision Review (DDR)						4Q		
Launch 3 (M3)							1Q	
Launch 4 (M4)								1Q

Classification:

Exhibit R-5, Termination Liability Funding for Major Defense Acquisition Programs, RDT&E Funding						DATE: **February 2007**		
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 2006**	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**
2472 Mobile User Objective System	$ 61.144	$ 50.486	$ 30.855	$ 23.873	$ 15.327	$ -	$ -	$ -

Notes:

1) Values are in millions of dollars.

2) The 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 FY 2006 are obligated at the beginning of FY 2006, but are required for expenditure at the beginning of FY 2007 (in October and November of CY 2006), assuming no termination occurs.

3) Termination values were obtained from the Contract Funds Status Report (CFSR), a contractually required deliverable on the Risk Reduction & Design Development (RRDD) contract.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2007**	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA-7	0303109N Satellite Communications (Space)				9122 Advanced Wideband System / Transformational Communications			
COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	19.227	0.000	8.052	10.268	42.369	54.214	89.540	95.930
RDT&E Articles Qty					4		20	

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) The Navy Transformational Communications (TC) Terminal Satellite Communications program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), Anti-Jam (AJ), 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 Navy unique missions. 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	9122 Advanced Wideband System / Transformational Communications

(U) B. Accomplishments/Planned Program

	FY 2006	FY 2007	FY 2008	FY 2009
AWS/TC Concept Development	19.227	0.000	8.052	10.268
RDT&E Articles Quantity				

(U) **FY 2006:** Continued system level engineering process to determine optimal tradeoffs between cost and performance. Mitigated risks that have been identified. Products to support the acquisition include the terminal suite acquisition specification flowdown, the Acquisition Strategy Report (ASR), and the draft Capability Development Document (CDD). Hardware products include the development of a prototype advanced Transmissions Security (TRANSEC)/Communications Security (COMSEC) computer chip that will be required for the operation of every Navy Transformations Communications (TC) terminal.

(U) **FY 2007:**

(U) **FY 2008:** Continue system level engineering process to determine optimal tradeoffs between cost and performance. Mitigate risks that have been identified. Develop products to support the acquisition including the terminal suite acquisition specification flowdown, the ASR and all required Milestone B documentation, and the draft CDD, all supporting development and release of a Transformational Satellite (TSAT) Terminal Request for Proposal (RFP) in FY 2010. Hardware products include the development of a prototype advanced 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, as well a program risk mitigation efforts. Continue drafting the Navy TSAT Terminal CDD, as well as all required Milestone (MS) B documentation. In preparation for 2Q FY 2010 MS B and RFP release. Continue development of a prototype advanced TRANSEC/COMSEC computer chip required for the operation of every Navy TC terminal.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Communications (Space)	9122 Advanced Wideband System / Transformational Communications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013

(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 Milestone B decision, including, but not limited to, a terminal specification, statement-of-work, Acquisition Strategy Report, and Source Selection Plan.

(U) E. MAJOR PERFORMERS:

Naval Undersea Warfare Center (NUWC), Newport, RI
SPAWAR Systems Center (SSC) San Diego (SD), San Diego, CA

(U) F. METRICS:

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT: 0303109N Satellite Communications (Space)

PROJECT NUMBER AND NAME: 9122 Advanced Wideband System / Transformational Communications

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various	37.554			2.526	10/07	2.205	10/08	Continuing	Continuing	
Systems Engineering	Various	Various	4.481			1.283	10/07	1.534	10/08	Continuing	Continuing	
Systems Engineering	WR	NUWC	3.418			1.000	10/07	1.099	10/08	Continuing	Continuing	
Subtotal Product Development			45.453	0.000		4.809		4.838		Continuing	Continuing	

Remarks:

Development Support	WR	SSC SD	3.448			1.005	10/07	1.159	10/08	Continuing	Continuing	
Studies & Analyses	WR	Various	3.475			0.260	10/07	1.025	10/08	Continuing	Continuing	
Information Assurance	WR	Various	0.515			0.525	10/07	0.532	10/08	Continuing	Continuing	
Subtotal Support			7.438	0.000		1.790		2.716		Continuing	Continuing	

Remarks:

CLASSIFICATION:

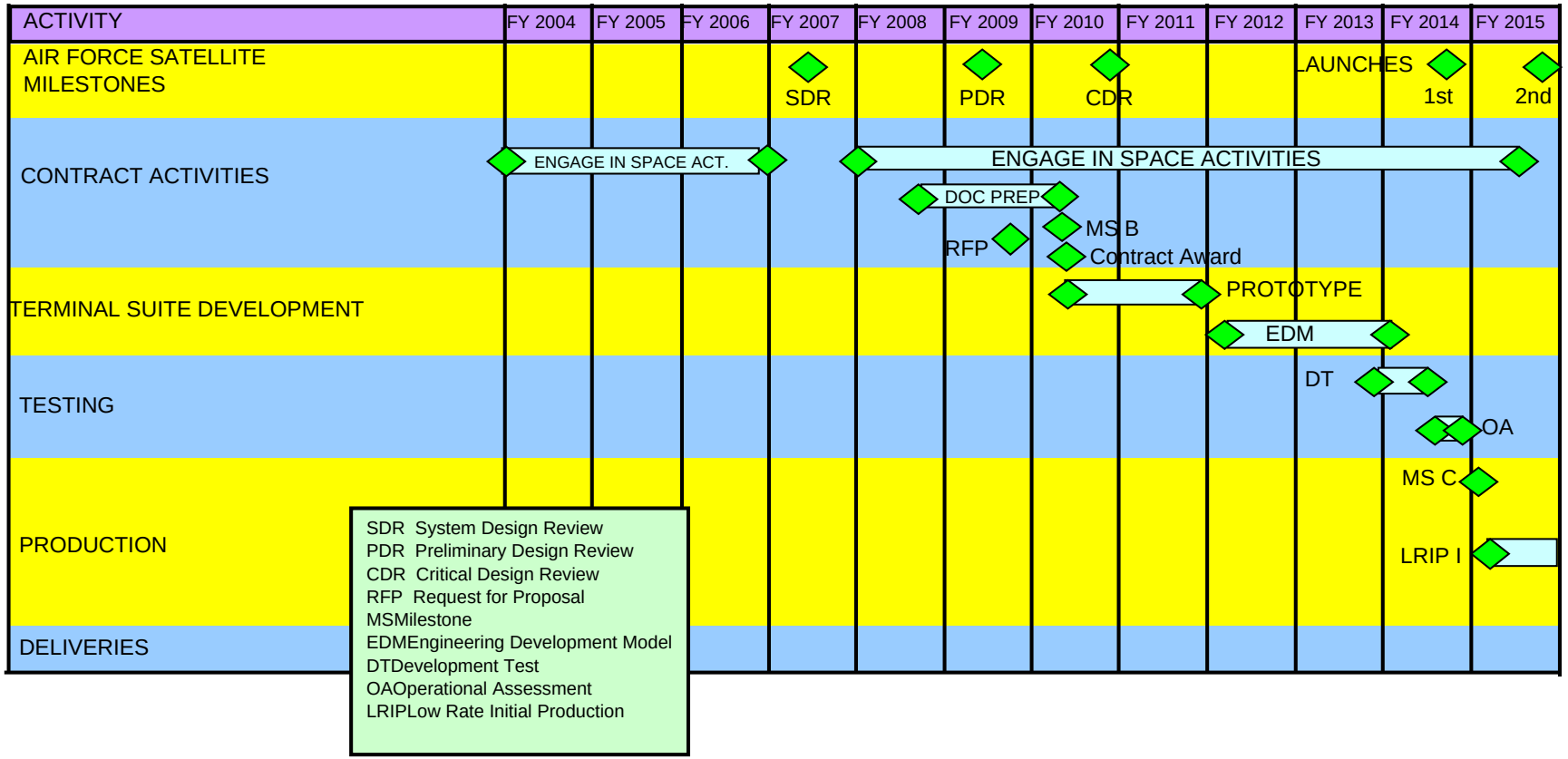
Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N Satellite Commu	9122 Advanced Wideband System / Transformational Communications

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 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		0.000		0.000		
Remarks:												
Contractor Engineering Support		SSC SD (San Diego, CA)	0.349					1.200	10/08	Continuing	Continuing	
Program Management Support	Various	Various	1.422			0.500	10/07	1.090	10/08	Continuing	Continuing	
Acquisition Management Support						0.853	10/07	0.324	10/08	Continuing	Continuing	
Travel			0.218			0.100	10/07	0.100	10/08	Continuing	Continuing	
Subtotal Management			1.989	0.000		1.453		2.714		Continuing	Continuing	
Remarks:												
Total Cost			54.880	0.000		8.052		10.268		Continuing	Continuing	
Remarks:												

EXHIBIT R4, Schedule Profile		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	9122 Advanced Wideband System / Transformational Communications



CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2007**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0303109N - Satellite Communications (Space)				PROJECT NUMBER AND NAME 9122 Advanced Wideband System / Trans. Communications			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone B					2Q			
Dual Contract Award					2Q			
Contract Award (Terminal Suite Development								
Developmental Testing								4Q
Operational Assessment (NOTE1)								
Milestone C (MS C) (NOTE 2)								
Start Low-Rate Initial Production I (LRIP I) (NOTE 3)								

NOTE 1: Operational Assessment is scheduled for 2Q FY2014
NOTE 2**:** MS C is scheduled for 1Q FY 2015
NOTE 3: Start of LRIP 1 is scheduled for 1Q FY 2015

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification | DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0303109N - Satellite Communications (Space)	9999 - Congressional Increases

COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	5.757	2.939	0.000	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) Congressional add's for Satellite Communications

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROJECT NUMBER AND NAME 9999 - Congressional Increases	

(U) B. Accomplishments/Planned Program

JIST-NET Systems (9421C)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	3.362	1.943	0.000	0.000
RDT&E Articles Quantity				

(U) **FY 2006**: Completed analysis of monthly satellite resource usage metrics collected since 1Q FY06 ; included demonstration of the Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) V2S1 Situational Awareness (SA) Modules . Completed development of applicable acquisition documentation.
(U) **FY2007:** Update JIST-NET Version 3 Spiral 1; provide updated Satellite Access Request (SAR) Module and updated SA Module. Complete development of Acquisition Strategy, and Government Development Testing, along with applicable acquisition documentation.

Covert and Comm & Information Transfer (9429C)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.480	0.000	0.000	0.000
RDT&E Articles Quantity				

(U) **FY 2006**: Completed Covert Communications required for operational utilization.

Navy Multiband Terminal (9889N)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	1.915	0.000	0.000	0.000
RDT&E Articles Quantity				

(U) **FY 2006**: Supported hardware and software prototype development efforts.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROJECT NUMBER AND NAME 9999 - Congressional Increases	

(U) B. Accomplishments/Planned Program

Internet Protocol Version 6 (IPV6) (9A98N)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	0.996	0.000	0.000
RDT&E Articles Quantity				

(U) **FY 2007**: Prepare several test facilities and produce test events to determine applicability of IPv6 technologies to support the needs of operational Navy through Tactical Networks, Wireless Networks, and the forthcoming Computing and Network Enterprise System (CANES) networking program. All test conditions and test results will be provided to our Joint Service partners and acquisition agencies associated with networking technologies. Applicability of the technologies and proposed targets will be delivered to OPNAV N6 for review and consideration in terms of future requirements documents.

	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				