BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

(U) Cost ($ in Thousands)	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL COST
X0728 EHF SATCOM Terminals	6,295	9,238	12,266							
X0731Fleet Satellite Comm	2,470	3,448	4,595							
X2472 Mobile User Segment	31,250	26,727	37,369							
Total PE Cost	40,015	39,413	54,230							

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

(U) The Navy Extremely High Frequency (EHF) Satellite Communications (SATCOM) Program (NESP) provides for the development and production of terminals to provide anti-jam, low probability of intercept/detection communications capability for Command and Control of the fleet. NESP operates with Fleet Satellite (FLTSAT) EHF Packages (FEP), Ultra High Frequency (UHF) Follow On (UFO),and Milstar I/II Satellite Packages. The Milstar program is comprised of satellites, control stations, and aircraft, ship, and ground terminals to provide assured worldwide, secure, anti-jam, survivable communications for the National Command Authority, CINCs, and operational commanders. The Advanced EHF (AEHF) Operational Requirements Document (ORD) was validated by the Joint Requirements Oversight Council (JROC) on 22 Mar 99. AEHF development cost estimates are included in the budget.

(U) The Navy Super High Frequency (SHF) Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), secure, and jam resistant communications to Joint and Allied Forces. SHF SATCOM operates with the Defense Satellite Communication System (DSCS), DSCS Service Life Extension Program (SLEP), Wideband Gapfiller Satellite (WGS) System, and the Advanced Wideband System (AWS) satellites. The SHF SATCOM system is comprised of satellites, ground stations, and aircraft, ship and ground terminals to provide assured worldwide access to services such as Defense Information Systems Network (DISN), Global Command and Control System (GCCS), Plain Old Telephone Service (POTS), Secure Telephone Unit III (STU III) Secure Communications Service, Internet Protocol Routed Networks, and other digital services. The satellite systems SHF SATCOM operate over are transitioning from old technology DSCS III satellites to the more advanced DSCS SLEP and WGS satellites beginning in FY 99 and continuing through FY 05. The population of Navy SHF SATCOM terminals is also growing at a rapid pace. In order to meet the communication requirements of Navy users, advanced communication technologies for SHF SATCOM terminals must be developed to take full advantage of the capabilities of the new satellites in an efficient manner.

(U) Fleet Satellite Communications includes Sensitive Compartmented Information (SCI) Automated Digital Network System (ADNS), which provides real time indications and warning communications support and enhanced SCI interoperability with other services, agencies, and allies permitting a level of integration not available with current systems.

(U) The Digital Modular Radio (DMR) provides tactical Joint interoperable UHF satellite communications. Per CJCSI 6251.01, DMR replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. DMR provides the framework for meeting the planned future SATCOM and Line of Sight (LOS) communications requirements in the 100 KHz to 2 GHz spectrum. Additionally, DMR provides for advanced higher data rate and capacity waveforms in the UHF spectrum supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

(U) The Mobile User Objective System (MUOS) program provides for the development of the next generation DoD advanced narrowband communications satellite constellation. The current UHF Follow-On (UFO) constellation is expected to degrade below acceptable availability parameters by FY07 and will require phased replacement starting at that time. In addition, new user requirements have been identified and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrating Integrated Product Team (IIPT) has developed an acquisition strategy to address the exponential growth of narrowband communications demands, which has resulted in identifying the need to explore new approaches to acquiring satellite based communications capabilities. This program builds on state of the art technologies and commercial practices to develop a totally responsive joint warfighter system.

(U) An eleventh UFO satellite is being procured to maintain the current UFO constellation until the MUOS can be fielded. Additionally, the UFO receiver used on all previous UFO satellites is obsolete and no longer available. The contractor developed and tested a replacement UHF digital receiver for the UFO gapfiller satellite.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for the upgrade of an existing, operational system.

B. Program Change

(U) Funding:

FY 2000: -$187K net reduction in FY2000 funding is a combination of: -$200K ONR BTR update; -$10K Federal Technology Transfer; -$991K SBIR Load; -$153K Section 8055; -$466K SPAWAR BTRs; +$1,354K FY00 Midyear Review Adjustments; +$279K FY00 actual execution .

FY 2001: $1,635 increase in FY2001 funding is a combination of -$278K Section 8086 0.7% Pro Rata Reduction; -$87K Government-Wide Rescission PL106-554; and +$2,000K Space Activities.

(U) Schedule:

FY 2000: MST 6000 (Flight 5) moved from 5/00 to 8/00
FY 2001: MUOS Program Milestone A moved from 3rd Qtr 01 to 4th Qtr 01. MUOS CAD contracts award date moved from 3rd Qtr 01 to 4th Qtr 01. (X2472), Milstar II Launch (Flight 4) from 6/00 to 2/01 (X0728), MST 8000 (Flight 4) from 1/01 to 2/01 (X0728).

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER& TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY2007 ESTIMATE	COST TO COMPLETE	TOTAL COST
X0728 EHF SATCOM Terminals	6,295	9,238	12,266							

A. Mission Description and Budget Item Justification:

(U) Navy Extremely High Frequency (EHF) Satellite Communications (SATCOM) Program provides for the development and production of terminals to provide anti-jam (A/J), low probability of intercept (LPI)/detection communications capability for Command and Control of the fleet. The terminals will provide physical and electromagnetically survivable, worldwide communications in the current and projected electromagnetic and nuclear threat environments. Navy EHF terminals are interoperable with Army and Air Force terminals and will operate with Milstar as well as EHF packages on-board Ultra High Frequency (UHF) Follow-On (UFO) Satellites 4 through 11 and FLTSATCOM Satellites 7 and 8. The increased capability provided by EHF terminals is accomplished by use of the wider bandwidths available at extremely high frequencies, narrow antenna beamwidths, spread spectrum techniques, on-board satellite processing, and advanced signal processing technology.

(U) The Navy Super High Frequency (SHF) Satellite Communications (SATCOM) program provides for the development and production of terminals to provide high capacity reliable, low probability of intercept (LPI), secure, and jam resistant communications to Joint and Allied Forces. SHF SATCOM operates with the Defense Satellite Communication System (DSCS), DSCS Service Life Extension Program (SLEP), Wideband Gapfiller Satellite (WGS) System, and the Advanced Wideband System (AWS) satellites. The SHF SATCOM system is comprised of satellites, ground stations, and aircraft, ship and ground terminals to provide assured worldwide access to services such as Defense Information Systems Network (DISN), Global Command and Control System (GCCS), Plain Old Telephone Service (POTS), Secure Telephone Unit III (STU III) Secure Communications Service, Internet Protocol Routed Networks, and other digital services. The satellite systems SHF SATCOM operate over are transitioning from old technology DSCS III satellites to the more advanced DSCS SLEP and WGS satellites beginning in FY 99 and continuing through FY 05. The population of Navy SHF SATCOM terminals is also growing at a rapid pace. In order to meet the communication requirements of Navy users, advanced communication technologies for SHF SATCOM terminals must be developed to take full advantage of the capabilities of the new satellites in an efficient manner.

(U) The EHF Medium Data Rate (MDR) upgrade program is near development completion and provides increased bandwidth by providing higher data rates [4.8 kilobits per second (Kbps) – 1.544 megabits per second (Mbps)] when communicating with Milstar II satellites.

(U) The Navy EHF Communications Controller (NECC) provides automated, netted tactical data information exchange over jam resistant EHF LDR satellite links. The NECC will provide for load and channel sharing, resource management, communications management and planning, network control and monitoring, and packet switching.

(U) The EHF Time Division Multiple Access (TDMA) Interface Processor (TIP) will support wide area network (WAN) implementation through reliable, efficient, netted data exchange using MDR services. The MDR TIP combines support for general-purpose internet protocol (IP) data delivery and high speed, rapid delivery of tactical data within a single system architecture. TIP supports single-beam, multi-beam, and multi-satellite networks.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

(U) Advanced EHF is the follow-on satellite communications system that replenishes the existing Milstar I/II (LDR/MDR) satellite constellations. The Advanced EHF system will be compatible with today's Navy LDR/MDR terminals, and provide increased communications capability to the warfighter. The Advanced EHF system provides an increase in single service capability from 1.5 Mbps to 8 Mbps, increases the number of coverage areas, and retains A/J,LPI protection characteristics.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

(U) ($3,995) Continued to perform MDR software corrections resulting from MST-6000 (flights 3 & 4) testing with flight model MDR satellite. Completed MDR ILS development: updated MDR software documentation; performed software configuration management; performed system testing to reflect changes in terminal baseline; supported installation, checkout, and integration of EDM antenna/pedestals on operational platform, EDM MDR modems, and field change kits in support of Milstar testing; and continued MDR Satellite Simulator (SATSIM) and MDR modem development and modifications.

(U) ($238) Planned NESP MDR test resources, prepared and coordinated the NESP test and evaluation master plan (TEMP) and participated in Air Force Milstar System test working groups.

(U) ($1,168) Continued development of TIP/NECC modifications. Extend IP capability from MDR to LDR, add IDS 8648 GFCP Interface.

(U) ($894) Continued terminal development, engineering analysis and management.

2. (U) FY 2001 PLAN:

(U) ($1,035) Complete MDR Modem and MDR Satellite Simulator (SATSIM) upgrade and perform Over the Air (OTA) MDR communications testing and LDR regression testing. Provide software corrections as necessary.

(U) ($1,928) Continue development of TIP/NECC modifications and perform OTA testing to verify performance in multi-terminal configuration.

(U) ($3,612) Initiate identification of Advanced EHF terminal upgrade specification. Initiate system engineering studies and analysis. Perform waveform simulation and analysis. Participate in satellite to terminal interface requirements studies and analysis.

(U) ($1,650) Participate in Milstar on Orbit test and checkout of Milstar flight 4 (MST 8000). Conduct MDR Developmental Test and Operational Test (DT/OT) for ship and shore systems. Participate in joint interoperability communications with Army SMART-T MDR terminal.

(U) ($1,013) Continue terminal development engineering analysis and management.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

3. (U) FY 2002 PLAN:

(U) ($1,125) Complete development of TIP/NECC modifications.

(U) ($6,952) Continue AEHF system engineering studies and analysis, perform terminal upgrade design and development, develop test procedures, develop terminal and satellite simulators, perform ground based testing.

(U) ($1,206) Participate in Milstar on Orbit test and checkout of Milstar flight 5 and 6 (MST 8000). Continue to participate in joint interoperability communications with Army SMART-T MDR terminal.

(U) ($1,033) Continue terminal development engineering analysis and management.

(U) ($1,950) Develop advanced SHF modems for Wideband Gapfiller Satellite system and AN/WSC-6 terminal upgrades.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	TO COMPLETE	TOTAL PROGRAM
OPN SHIP* 321000	82,115									
OPN SHIP & Shore* 321500		81,520	71,243							
OPN SHORE* 322000	26,935									

*Includes EHF terminal installation costs.

(U) Related RDT&E:

(U) PE 0303603F, Milstar

(U) PE 0303601F, Air Force Satellite Communications

(U) PE 0303142A, Army Extremely High Frequency Communications Terminal

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N**
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

C. (U) ACQUISITION STATEGY:

	FY 2000	FY 2001	FY 2002
Program Milestones	N/A	Milstar II Launch (Flight 4) 2/01	Milstar II Launch (Flight 5) 2/02
Engineering Milestones	N/A	N/A	N/A
T&E Milestones	MST 6000 (Flight 5) 8/00	MST 8000 (Flight 4) 3/01	MDR FOT&E 11/01 MST 8000 (Flight 5) 3/02
Contract Milestones	Low Data Rate (LDR)/ Medium Data Rate (MDR) Prod Yr (1) Awd	N/A	AEHF Awd 04/02

D. (U) SCHEDULE PROFILE: N/A

EXHIBIT R-3, FY 2002 RDT&E, N PROJECT COST ANALYSIS **DATE: JUNE 2001**

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0728**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: EHF SATCOM Terminal**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY02 Cost	FY 02 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Mission Equipment	SS/CPFF	Raytheon Marlborough, MA	37,177	4,424	12/99	5,762	12/00	6,522	12/01	CONT.	CONT.	
Prime Mission Equipment	WX	SSC SD	12,029	363	11/99	466	11/00	503	11/01	CONT.	CONT.	
Prime Mission Equipment	Various	Other	6,811	417	12/99	350	12/00	2,330	12/01	CONT.	CONT.	
Subtotal Product Development			56,017	5,204		6,578		9,355		CONT.	CONT.	
Remarks:												
Support Cost/Management Services												
Program Management	WX	SSC SD	6,561	210	12/99	224	12/00	245	12/01	CONT.	CONT.	
Program Management	WX	NUWC	5,133	172	12/99	340	12/00	380	12/01	CONT.	CONT.	
Program Management	Various	Other	4,162	316	12/99	129	12/00	153	12/01	CONT.	CONT.	
Subtotal Support			15,856	698		693		778		CONT.	CONT.	
Remarks												

EXHIBIT R-3, FY 2002 RDT&E, N PROJECT COST ANALYSIS **DATE: JUNE 2001**

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0728**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: EHF SATCOM Terminal**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation												
Test & Evaluation	Various	Various	5,617	393	12/99	1,967	12/00	2,133	12/01	CONT.	CONT.	
Subtotal T&E			5,617	393		1,967		2,133		CONT.	CONT.	
Remarks												
Management Services												
Subtotal Management												
Remarks												
Total Cost			77,490	6,295		9,238		12,266		CONT.	CONT.	
Remarks												

EXHIBIT R-2a, FY 2002 RDT&E, N PROJECT JUSTIFICATION: DATE: JUNE 2001

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY2001 ESTIMATE	FY2002 ESTIMATE	FY2003 ESTIMATE	FY2004 ESTIMATE	FY2005 ESTIMATE	FY2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL COST
X0731 Fleet Satellite Communications	2,470	3,448	4,595							

A. Mission Description and Budget Item Justification:

(U) The Sensitive Compartmented Information (SCI) Automated Digital Network System (ADNS) implements the Integrated Special Intelligence Communications portion of the ADNS architecture, to provide services for transfer of Special Intelligence (SI) information between ships and shore activities in support of joint and combined operations. SCI ADNS has been combined into the SI communications architecture and 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 SI operations not achievable with current systems.

(U) The Joint ultra high frequency (UHF) Military Satellite Communications Network Integrated Control System (JMINI) Control system will provide dynamic centralized control of joint 5-kHz and 25kHz UHF military satellite communications (MILSATCOM) voice and data resources (channels and Time Division Multiple Access (TDMA)) time slots via a globally integrated system of four control stations to be located at each of the three Naval Computer and Telecommunications Area Master Station (NCTAMS) sites plus Naval Computer and Telecommunications Station (NCTS) Guam. The Digital Modular Radio (DMR) serves as the JMINI Control System Channel Controller and provides tactical Joint interoperable UHF satellite communications. Per CJCSI 6251.01, DMR replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. DMR provides the framework for meeting the planned future SATCOM and LOS communications requirements in the 100 KHz to 2 GHz spectrum. Additionally, DMR provides for advanced higher data rate and capacity waveforms in the UHF spectrum supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

   (U) ($2,470) Transitioned SCI ADNS functionality to Windows NT/IT 21 compliant architecture to include re-hosting to Cryptologic Workstation environment. Integrated and implemented SCI ADNS Build II. Continued development of voice, data and video integration into SCI ADNS environment. Prepared for SCI Defense Messaging System integration. Conducted Developmental Testing (DT) and Follow on Operational Testing and Evaluation (FOT&E) of SCI ADNS.

2. (U) FY 2001 PLAN:

   (U) ($1,448) Continue integration and implementation of SCI/ADNS and associated Special Intelligence Communication capabilities. Developmental testing of upgrades, OT&E, FOT&E, Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) of SCI/ADNS will be accomplished.

   (U) ($2,000) Space Activities SATCOM systems integration initiative.

3. (U) FY 2002 PLAN:

   (U) ($756) Continue integration and implementation of SCI/ ADNS and associated Special Intelligence Communication capabilities. Developmental Testing of upgrades, OT&E, FOT&E, FunctionalConfiguration Audit (FCA) and Physical Configuration Audit (PCA) of SCI /ADNS will be accomplished.

   (U) ($3,839) Modify DMR to be compliant with the new Joint Tactical Radio System (JTRS) architecture. Start development of the Integrated Waveform into DMR. Initiate development of the DMR automated Radio Frequency (RF) distribution system to maximize the capabilities of DMR and set the Navy on the path to an automated radio room.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

B. (U) OTHER PROGRAM FUNDING SUMMARY. (Dollars in Thousands)

	FY 2000	FY 2001	FY 2002	FY 2003	FY2004	FY2005	FY2006	FY2007	TO COMPLETE	TOTAL PROGRAM
OPN SHIP* 321000	7,395	10,629	0							
OPN SHIP/SHORE* 305000		0	5,522							
OPN SHORE* 322000	820	447	0							
OPN SATCOM 321500	0	21,740	28,640							
O&M,N	5,399	7,556	3,957							

*Includes terminal installation costs.
(U) Related RDT&E: N/A

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

C. (U) ACQUISITION STRATEGY:

	FY2000	FY2001	FY2002
Program Milestones	SCI ADNS 2 IOC 6/00	N/A	N/A
	Down select to One DMR Vendor		DMR MS-III DMR IOC
Engineering Milestones	SCI ADNS 2 PCA 3/00	N/A	N/A
T&E Milestones	SCI ADNS 2 DT 7/00 OT 9/00	SCI ADNS 2 DT 7/01 FOTE 9/01	N/A
			DMR DT-IIIB DMR OT-IIIA, OT-IIIB
Contract Milestones	N/A	N/A	N/A

D. (U) SCHEDULE PROFILE: See paragraph C.

EXHIBIT R-3, FY 2002 RDT&E, N PROJECT COST ANALYSIS **DATE: JUNE 2001**

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost To Complete	Total Cost	Target Value of Contract
1.1.1 Prime Mission Product	FPI	Titan	6,309	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	FFP	SRC	18,505	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	PD	NAVSUP/SRC	5,223	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	VAR	VAR	9,779	1,815	12/99	806	12/00	569	12/01	CONT.	CONT.	
Subtotal Product Development			39,816	1,815		806		569		CONT.	CONT.	
Remarks:												
1.1.1 Prime Mission Product	CPFF	CSC	3,588	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	PD	NAVAIR/ISC	1,176	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	VAR	VAR	9,343	0		0		0		CONT.	CONT.	
1.1.1 Prime Mission Product	FFP	Motorola	0	0		0		2,750	TBD	CONT.	CONT.	
GFE												
Subtotal Support			14,107	0		0		2,750		CONT.	CONT.	
Remarks												

EXHIBIT R-3, FY 2002 RDT&E, N PROJECT COST ANALYSIS **DATE: JUNE 2001**

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X0731**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: SCI/ADNS**

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost To Complete	Total Cost	Target Value of Contract
1.2.5 System T&E	N/A	SSC SD	202	473	12/99	460	12/00	789	12/01	CONT.	CONT.	
1.2.5 System T&E	N/A	OPTEVFOR	80	49	12/99	50	12/00	60	12/01	CONT.	CONT.	
1.2.5 System T&E	VAR	VAR	9,296	0		0		0				
1.2.5 System T&E	N/A	SSC Chas	0			1,700	TBD					
Subtotal T&E			9,578	522		2,210		849		CONT.	CONT.	
Remarks												
1.1.3 Program Management	CPFF	CSC	3,588							CONT.	CONT.	
1.1.3 Program Management	PD	NAVAIR/ISC	1,176							CONT.	CONT.	
1.1.3 Program Management	N/A	ACS	542	133	12/99	0		0		CONT.	CONT.	
1.1.3 Program Management	VAR	VAR	9,343			132	12/00	127	12/01	CONT.	CONT.	
1.1.3 Program Management	VAR	VAR	0					300	TBD	CONT.	CONT.	
1.1.3 Program Management	N/A	SSC Chas	0			300	TBD					
Subtotal Management			14,649	133		432		427		CONT.	CONT.	
Remarks												
Total Cost			78,150	2,470		3,448		4,595		CONT.	CONT.	

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X2472**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: Satellite Development**

Cost ($ in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	To Complete	Total Cost
X2472 Mobile User Segment	31,250	26,727	37,369							

A. Mission Description and Budget Item Justification:

(U) This program provides for: (1) the development of the digital receiver for the UHF Follow-On (UFO) F11 gapfiller satellite and (2) the development of the next generation DoD narrowband communications satellite constellation.

(U) The RDT&E effort for the UFO F11 satellite is to develop and test a digital receiver to replace the obsolete analog receiver used on UFO F1-F10. The F11 is required to maintain the health of the UFO constellation until the Mobile User Objective System (MUOS) system can be fielded.

(U) The current UFO constellation is expected to degrade below acceptable availability parameters and will require phased replacement by FY07. In addition, new user requirements have been identified and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrating Integrated Product Team (IIPT) has developed an acquisition strategy to address the exponential growth of narrowband communications demands, which has resulted in identifying the need to explore new approaches to acquiring satellite based communications capabilities. This program builds on state of the art technologies and commercial practices to develop a comprehensive joint warfighter system.

(U) This RDT&E effort supports the program objectives by assisting in identifying the most effective way to field a new system by FY07. Multiple Concept Exploration (CE) contracts were awarded in early FY00. Additional CE contracts will be awarded in FY01, along with commercial demonstrations, to support a MS I Defense Acquisition Board (DAB) in 3Q FY01. Multiple Risk Reduction contracts will be awarded after the DAB.

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X2472**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: Satellite Development**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY00 ACCOMPLISHMENTS:

(U) ($7,100) Awarded multiple Concept Exploration contracts for MUOS and funded commercial SATCOM offload demo.
(U) ($22,650) Design and test a digital receiver for UFO F11 gapfiller and program office support
(U) ($1,500) Funded required independent Analysis of Alternatives for MUOS.

2. (U) FY01 PLAN:

(U) ($25,485) Award multiple contracts for MUOS and conduct demonstration to evaluate commercial services viability in satisfying requirements.
(U) ($1,242) Funded required independent Analysis of Alternatives for MUOS.

3. (U) FY02 PLAN

(U) ($37,369) Fully fund up to two Risk Reduction contracts for MUOS.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

NUMBER TITLE	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
(U)WPN Line 243300 Fleet Satellite Communication Follow-On	9,634	94,660	77,840							

C. (U) ACQUISITION STRATEGY

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X2472**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: Satellite Development**

D. (U) SCHEDULE PROFILE:

	FY 2000	FY 2001	FY 2002
MUOS			
Program Milestones	N/A	4Q – MS A	N/A
Engineering Milestones	3Q-Concepts Delivered	N/A	3Q-Preliminary Designs Delivered
T&E Milestones	N/A	N/A	N/A
Contract Milestones	1Q-Multiple CE contracts Awarded	4Q-CAD Contracts Awarded	N/A
UFO F11			
Program Milestone	N/A	N/A	N/A
Engineering Milestone	3Q-Digital Receiver (Initial Design Review) IDR	N/A	N/A
T&E Milestone	N/A	N/A	N/A
Contract Milestone	SS/FFP 1Q-Mod for F11	1Q-Production Option Exercised	1Q-Launch Services Option Exercised

(U) Acquisition Strategy

UFO F11: A modification for F11 was added to the current UFO Contract. The RDT&E,N funds are to redesign the obsolete UHF receiver (FY00).

MUOS: Concept Exploration contracts were awarded in early FY00. After Government evaluation of the studies delivered under the Concept Exploration contracts, up to two Risk Reduction Contracts will be awarded in FY01. Funding for the Government's required independent Analysis of Alternatives was also provided.

EXHIBIT R-3, FY 2002 RDT&E, N PROJECT COST ANALYSIS **DATE: JUNE 2001**

BUDGET ACTIVITY: 7 **PROGRAM ELEMENT: 0303109N** **PROJECT NUMBER: X2472**
PROGRAM ELEMENT TITLE: Satellite Communications (Space) **PROJECT TITLE: Satellite Development**

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MUOS Contracts And Demos	COM/FP	Various	7,100	20,411	Various	35,969		CONT.	CONT.	CONT.
AoA for MUOS	MIPR	Various	1,500	1,242	Various				2,742	2,742
UFO Gapfiller – Digital Receiver	SS/FP	Hughes, El Segundo	18,200						18,200	18,200
Subtotal Product Development			26,800	21,653		35,969		CONT.	CONT.	CONT.
Remarks:										
Support Cost										
Program Support	Various	Program Support	4,450	5,074	Var.	1,400	Var.	CONT.	CONT.	CONT.
Subtotal Support Cost			4,450	5,074		1,400		CONT.	CONT.	CONT.
Remarks										
Total Cost			31,250	26,727		37,369		CONT.	CONT.	CONT.