

UNCLASSIFIED

EXHIBIT R-2, FY2001 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROGRAM ELEMENT TITLE: Satellite Communications (Space)

(U) Cost (\$ in Thousands)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
X0728 EHF SATCOM Terminals	15,668	8,447	9,323	10,570	10,693	11,852	8,071	CONT.	CONT.
X0731 Fleet Satellite Comm	1,816	2,814	1,480	1,012	0	0	0	CONT.	CONT.
X2472 Mobile User Segment	0	28,941	26,975	30,667	0	0	0	CONT	CONT
Total PE Cost	17,484	40,202	37,778	42,249	10,693	11,852	8,071	0	CONT.

A. Mission Description and Budget Item Justification:

(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 FLTSAT EHF Packages (FEP) and Ultra High Frequency (UHF) Follow On (UFO) Satellite Packages and is the Navy's portion of Milstar I/II. 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, and development cost estimates are included in the budget.

(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 Mobile User Observer System (MUOS) program develops the next generation DoD narrowband communications satellite constellation. The current UHF Follow-On (UFO) constellation is expected to degrade below acceptable availability parameters and will require replacement by FY07. In addition, new user requirements have been identified and validated as improvements in warfighter tactics, and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrated Product Team (IPT) 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 as a gapfiller to maintain the current UFO constellation until the MUOS can be put in place. The UFO receiver used on all previous UFOs is obsolete and no longer available. The contractor will develop and test 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 upgrade of existing, operational system.

UNCLASSIFIED

EXHIBIT R-2, FY2001 RDT&E,N BUDGET ITEM JUSTIFICATION

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PROGRAM ELEMENT: 0303109N

PROGRAM ELEMENT TITLE: Satellite Communications (Space)

B. Program Change Summary

(U) Funding:

FY 1999: Congressional reduction associated with Inflation Savings -\$ 83K. Transfer for SBIR -\$ 401K and +\$ 445K for Miscellaneous Department Adjustments.

FY 2000: +\$ 29,101K Program Reassignment and -\$ 219K Miscellaneous Department Adjustments. \$991K Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

FY 2001: +\$ 15,653K Program Reassignment, +\$ 11,500K MILSATCOM, +\$ 2,000K EHF Terminals, and -\$304K Miscellaneous Department Adjustments.

R-1 Shopping List – Item No 182-2 of 182-18

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2a, FY2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space) PROJECT TITLE: EHF SATCOM Terminals

Cost (\$ in Thousands)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
X0728 EHF SATCOM Terminals	15,668	8,447	9,323	10,570	10,693	11,852	8,071	CONT.	CONT.

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, low probability of intercept/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) A Medium Data Rate (MDR) capability is currently under development to utilize the capabilities on Milstar II satellites DFS-4 through DFS-7. MDR will provide the only protected (jam resistant and low probability of intercept/detection) MDR data rates from 4.8 kilobits per second (Kbps) to 1.544 megabits per second (Mbps) to the majority of the fleet.

(U) The Navy EHF Communications Controller (NECC) provides automated, netted tactical data information exchange over jam resistant EHF 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 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. TIP development supports implementation of tactical networks concurrent with deployment of MDR.

(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.

UNCLASSIFIED

EXHIBIT R-2a, FY2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space)PROJECT TITLE: EHF SATCOM Terminals

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$7,511) Performed MDR software corrections resulting from MST-6000 testing with flight model MDR satellite. Continued MDR ILS development; prepared MDR software documentation; performed software configuration management; performed system testing; supported installation, checkout, and integration of EDM antenna/pedestals on operational platforms, EDM MDR modems, and field change kits in support of MST testing; and continued MDR SATSIM development and modifications.
- (U) (\$ 700) Performed ship and shore integration for MDR upgrade.
- (U) (\$ 900) Performed MST-8000 development testing with initial AN/USC-38(V) with MDR, and Army MDR terminal.
- (U) (\$1,839) Performed TECHEVALs for Navy MDR and prepare for Milstar MDR OPEVALs and IOT&E.
- (U) (\$1,983) Continued development of NECC/TIP modifications. Conducted developmental and operational testing of MDR capable NECC units.
- (U) (\$1,290) Developed modifications required to maintain compatibility with future EHF satellite constellations (i.e., Advanced EHF). Investigated antenna technology advancements including phased array and flat plate antennas. Began investigation of Radar Cross Section (RCS) vulnerability reduction measures.
- (U) (\$1,445) Continued terminal and development engineering analysis and management.

UNCLASSIFIED

EXHIBIT R-2a, FY2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

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PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space)PROJECT TITLE: EHF SATCOM Terminals

2. (U) FY 2000 PLAN:

- (U) (\$3,716) Complete development of EDM MDR modems and perform integration activities with MDR Satellite Simulator (SATSIM). Continue software regression testing, anomaly resolution, and upgrade ADR to provide diagnostic debug capability.
- (U) (\$ 1,420) Continue testing for Navy MDR and participate in Milstar MDR OPEVAL/IOT&E for multiple MDR constellations. Perform MST-6000 Milstar Flight 5 testing and MST-8000 on-orbit test checkout Milstar Flight 4 with AN/USC-38(V) with MDR and Army MDR terminal to verify compatibility and Space Segment Capabilities.
- (U) (\$ 1,417) Continue development of TIP/NECC modifications. Extend IP Capability from MDR to LDR, add IDS 8648 GFCP Interface.
- (U) (\$1,000) Continue Advanced EHF system engineering analysis and specification generations to develop AEHF modem and antennas to interface with Legacy AN/USC-38(V) NESP Communications Electronic Group (CEG) and Follow On Terminal (FOT).
- (U) (\$ 894) Continue terminal development engineering analysis and management.

3. (U) FY 2001 PLAN:

- (U) (\$ 1,928) Complete development of TIP/NECC modifications.
- (U) (\$4,607) Begin design and finish specification preparation for Advanced EHF, continue system engineering and studies.
- (U) (\$ 1,755) Perform MST-8000 on-orbit test checkout Milstar Flight 5 with AN/USC-38(V) with MDR and Army MDR terminal to verify compatibility and Space Segment Capabilities and terminal segment interoperability/compatibility .
- (U) (\$1,033) Continue terminal development engineering analysis and management.

R-1 Shopping List – Item No 182-5 of 182-18

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space) PROJECT TITLE: EHF SATCOM Terminals

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

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TO COMPLETE	TOTAL PROGRAM
OPN SHIP* 321000	48,705	87,647.							
OPN SHIP & Shore* 321500			125,293	98,049	47,820	21,913	12,392	CONT	CONT
OPN SHORE* 322000	13,927	31,675.							

*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

C. (U) ACQUISITION STRATEGY:

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Program Milestones	N/A	Milstar II Launch (Flight 4) 5/00	Milstar II Launch (Flight 5) 12/00
Engineering Milestones	N/A	N/A	N/A
T&E Milestones	MST 6000 (Flight 4) 7/99	MST 6000 (Flight 5) 5/00 MST 8000 (Flight 4) 6/00	MST 8000 (Flight 5) 1/01
Contract Milestones	N/A	N/A	N/A

D. (U) SCHEDULE PROFILE: N/A

R-1 Shopping List – Item No 182-6 of 182-18

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space)PROJECT TITLE: EHF SATCOM Terminals

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development												
Prime Mission Equipment	SS/CPFF	Raytheon Marlborough, MA	29,501	7,676	12/98	4,786	12/99	5,585	12/00	CONT	CONT	
Prime Mission Equipment	WX	SSC SD	10,194	1,835	11/98	481	11/99	578	11/00	CONT	CONT	
Prime Mission Equipment	Various	Other	4,641	2,170	12/98	675	12/99	422	12/00	CONT	CONT	
Subtotal Product Development			44,336	11,681		5,942		6,585		CONT	CONT	
Remarks:												
Support Cost/Management Services												
Program Management	WX	SSC SD	5,532	1,029	12/98	346	12/99	660	12/00	CONT	CONT	
Program Management	WX	NUWC	4,712	421	12/98	247	12/99	489	12/00	CONT	CONT	
Program Management	Various	Other	3,676	486	12/98	361	12/99	389	12/00	CONT	CONT	
Subtotal Support			13,920	1,936		954		1,538		CONT	CONT	
Remarks												

R-1 Shopping List – Item No 182-7 of 182-18

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X0728

PROGRAM ELEMENT TITLE: Satellite Communications (Space)PROJECT TITLE: EHF SATCOM Terminals

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation												
Test & Evaluation	Various	Various	3,566	2,051	12/98	1,551	12/99	1,200	12/00	CONT	CONT	
Subtotal T&E			3,566	2,051		1,551		1,200		CONT	CONT	
Remarks												
Management Services												
Subtotal Management												
Remarks												
Total Cost			61,822	15,668		8,447		9,323		CONT	CONT	
Remarks												

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER: X0731
PROJECT TITLE: SCI/ADNS

Cost (\$ in Thousands)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
X0731 Fleet Satellite Communications	1,816	2,814	1,480	1,012	0	0	0	CONT	CONT

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, aircraft, 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. 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.

NOTE: SCI ADNS To Complete Funding will be addressed during POM 02.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$1,816) Continued implementation of SCI ADNS.

R-1 Shopping List – Item No 182-9 of 182-18

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

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

**PROJECT NUMBER: X0731
PROJECT TITLE: SCI/ADNS**

2. (U) FY 2000 PLAN:

- (U) (\$2,814) Transition SCI ADNS functionality to Windows NT/IT 21 compliant architecture to include re-hosting to Cryptologic Workstation environment. Integrate and implement SCI ADNS Build II. Continue development of voice, data and video integration into SCI ADNS environment. Preparation for SCI Defense Messaging System integration. Developmental Testing (DT) and Follow on Operational Testing and Evaluation (FOT&E) of SCI ADNS.

3. (U) FY 2001 PLAN:

- (U) (\$1,480) Continue integration and implementation of SCI/ ADNS and associated Special Intelligence Communication capabilities. FOT&E, Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) of SCI /ADNS will be accomplished.

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

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY2004	FY2005	TO COMPLETE	TOTAL PROGRAM
OPN SHIP* 321000	2,729	4,341							
OPN SHIP* 321500			4,293	3,132	7,217			CONT	CONT
OPN SHORE* 322000	687	693							

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

**R-1 Shopping List – Item No 182-10 of 182-18
UNCLASSIFIED**

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER: X0731
PROJECT TITLE: SCI/ADNS

C. (U) ACQUISITION STRATEGY:

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Program Milestones	N/A	SCI ADNS 2 IOC 6/00	
Engineering Milestones	N/A	SCI ADNS 2 PCA 3/00	
T&E Milestones	SCI ADNS 1 OT1 7/99	SCI ADNS 2 DT 7/00 OT 9/00	SCI ADNS 2 DT 7/01 FOTE 9/01
Contract Milestones	N/A	N/A	N/A

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER: X0731
PROJECT TITLE: SCI/ADNS

D. SCHEDULE PROFILE: See paragraph C.

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
1.1.1 Prime Mission Product	FPI	Titan	6,309	0		0		0		0	6,309	
1.1.1 Prime Mission Product	FFP	SRC	18,505	0		0		0		0	18,505	
1.1.1 Prime Mission Product	PD	NAVSUP/SR C	3,946	1,277	Dec 98	1,848	Dec 99	528	Dec 00	343	7,942	
1.1.1 Prime Mission Product	VAR	VAR	9,654	125	Dec 98	300	Dec 99	300	Dec 00	189	10,579	
Subtotal Product Development			38,414	1,402		2,148		828		532	43,335	
Remarks:												
1.1.1 Prime Mission Product	CPFF	CSC	3,588	0		0		0		0	3,588	
1.1.1 Prime Mission Product	PD	NAVAIR/ISC	1,176	0		0		0		0	1,176	
1.1.1 Prime Mission Product	VAR	VAR	9,343	0		0		0		0	9,343	
GFE												
Subtotal Support			14,107	0		0		0		0	14,107	
Remarks												

R-1 Shopping List – Item No 182-12 of 182-18
UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 7

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

**PROJECT NUMBER: X0731
PROJECT TITLE: SCI/ADNS**

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
1.2.5 System T&E	N/A	SSC SD	0	202	Dec 98	433	Dec 99	420	Dec 00	247	1,302	
1.2.5 System T&E	N/A	OPTEVFOR	0	80	Dec 98	100	Dec 99	100	Dec 00	100	380	
1.2.5 System T&E	VAR	VAR	9,296	0		0		0		0	9,296	
Subtotal T&E			9,296	282		533		520		347	10,978	
Remarks												
1.1.3 Program Management	CPFF	CSC	3,588								3,588	
1.1.3 Program Management	PD	NAVAIR/ISC	1,176								1,176	
1.1.3 Program Management	N/A	ACS	410	132	Dec 98	133	Dec 99	132	Dec 00	133	940	
1.1.3 Program Management	VAR	VAR	9,343								9,343	
Subtotal Management			14,517	132		133		132		133	15,047	
Remarks												
Total Cost			76,334	1,816		2,814		1,480		1,012	83,467	

**R-1 Shopping List – Item No 182-13 of 182-18
UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER: X2472
PROJECT TITLE: Satellite Development

Cost (\$ in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2472 Satellite Development	0	28,941	26,975	30,667	0	0	0	CONT	CONT

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 gapfiller satellite is to develop and test a digital receiver to replace the obsolete analog receiver used on UFO F1-F10. The F11 is being procured to maintain the health of the UFO constellation until the Mobile User Objective System (MUOS) system can be put in place.

(U) The current UFO constellation is expected to degrade below acceptable availability parameters and will require replacement by FY07. In addition, new user requirements have been identified and validated as improvements in warfighter tactics, and strategies have been modified to incorporate new concepts and technologies. The joint MUOS Integrated Product Team (IPT) 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) This RDT&E effort supports the program objectives by assisting in identifying the most effective way to field a new system by FY07. Four Concept Exploration contracts were awarded in early FY00. This budget also supports a year long Analysis of Alternatives for MUOS. The resulting system concepts will be evaluated for feasibility and used as a basis for the two Risk Reduction contracts to be awarded in FY01.

R-1 Shopping List – Item No 182-14 of 182-18

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

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) FY99 PLAN:

- (U) (\$0) N/A

2. (U) FY00 PLAN:

- (U) (\$4,000) Award four Concept Exploration contracts for MUOS.
- (U) (\$23,441) Design and test a digital receiver for UFO F11 gapfiller.
- (U) (\$1,500) Fund required independent Analysis of Alternatives for MUOS.

3.(U) FY01 PLAN

- (U) (\$26,975) Award up to two Risk Reduction contracts for MUOS.

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

NUMBER TITLE	<u>FY 1999 ESTIMATE</u>	<u>FY 2000 ESTIMATE</u>	<u>FY 2001 ESTIMATE</u>	<u>FY 2002 ESTIMATE</u>	<u>FY 2003 ESTIMATE</u>	<u>FY 2004 ESTIMATE</u>	<u>FY 2005 ESTIMATE</u>	<u>TO COMPLETE</u>	<u>TOTAL PROGRAM</u>
(U) WPN Line 243300 Fleet Satellite Communication Follow-On	0	9,754	170,537	0	0	0	0	0	181,500

C. (U) ACQUISITION STRATEGY

(U) RELATED RDT&E: N/A

R-1 Shopping List – Item No 182-15 of 182-18

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N
PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT NUMBER: X2472
PROJECT TITLE: Satellite Development

D. (U) SCHEDULE PROFILE:

MUOS

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY2001</u>
Program Milestones	4Q-MS 0		2Q – MS 1
Engineering Milestones		3Q-Concept Delivered	
T&E Milestones			
Contract Milestones		1Q-Multiple CE contracts Awarded	2Q-Risk Reduction Contracts Awarded

UFO GAPFILLER

Program Milestone

Engineering Milestone

T&E Milestone

Contract Milestone

SS/FFP
1Q-Mod for F11

(U) Acquisition Strategy

R-1 Shopping List – Item No 182-16 of 182-18
UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 7

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PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT TITLE: Satellite Development

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

MUOS: A Milestone 0 memorandum is expected to designate the MUOS on ACAT I program under Navy responsibility. Concept Exploration contracts will be 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 will also be provided.

R-1 Shopping List – Item No 182-17 of 182-18

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-3, RDT&E,N BUDGET PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0303109N

PROJECT NUMBER: X2472

PROGRAM ELEMENT TITLE: Satellite Communications (Space)

PROJECT TITLE: Satellite Development

Exhibit R-3 Cost Analysis (page 1)										Date: July 1999		
APPROPRIATION: RDT&E,N BUDGET ACTIVITY : 7				PROGRAM ELEMENT: 0303109N						Mobile User Segment X2472		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
MUOS CE Contracts	COM/FP	Various	0	0	N/A	2,840	Oct 99			0	2,840	2,840
MUOS Risk Reduction	COM/FP	Various						25,575	Feb 01	30,667	56,242	56,242
AoA for MUOS	MIPR	Various	0	0	N/A	1,500	Oct 99				1,500	1,500
UFO Gapfiller – Digital Receiver	SS/FP	Hughes, El Segundo	0	0	N/A	21,751	Oct 99	0	Oct 00	0	21,751	21,751
Subtotal Product Development			0	0		26,091		25,575		30,667	82,333.	82,333
Remarks:												
Support Cost												
Program Support	Var	Program Support	0	0	N/A	2,850	Oct 99	1,400	Oct 00		4,250	4,250
Subtotal Support Cost			0	0		2,850		1,400			4,250	4,250
Rem												
Total Cost			0	0		28,941		26,975		30,667	86,583	86,583

R-1 Shopping List – Item No 182-18 of 182-18

UNCLASSIFIED

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