# UNCLASSIFIED FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT TITLE: Tactical Data Links

(U) COST: (Dollars in Thousands)

**PROJECT** 

NUMBER &	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	TO	TOTAL
TITLE	ACTUAL	ESTIMATE	COMPLETE	PROGRAM						

X1743 Link-16 Improvements

3,509 4,138 15,207

X2126 ATDLS Integration

39,197 21,867 24,155

TOTAL 42,706 26,005 39,362

## A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

- (U) This program element (PE) develops and improves the Navy's tactical data link systems. It includes the Link-16 Improvements and Advanced Tactical Data Link Systems (ATDLS) Integration Programs.
- (U) Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (C2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and high throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of factical data transfer.

R-1 Shopping List - Item No 185-1 of 185-17 UNCLASSIFIED

# UNCLASSIFIED FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT TITLE: Tactical Data Links

- (U) The ATDLS Integration Program will integrate the Multifunctional Information Distribution System Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a pre-planned product improvement of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class 2 terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft, U.S. Navy ships, and U.S. Marine Corps ground units with crypto-secure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IIA.
- (U) ATDLS Integration Program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor is a software development effort that provides an interface between the TADILs (Links 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS Command and Decision (C&D)). The Common Data Link Management System is a pre-planned product improvement of the Command and Control Processor. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration and Dynamic Network Management. Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field.
- (U) This program element also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.
- (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 systems.

R-1 Shopping List - Item No 185-2 of 185-17 UNCLASSIFIED

## UNCLASSIFIED FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT TITLE: Tactical Data Links

### B. (U) PROGRAM CHANGE SUMMARY:

### (U) Funding:

FY 2000: Transfer to SBIR (-\$680K), Federal Technology and Advancement Act (-\$15K), WINSAT (-\$300K), IWARS (-\$230K), NSS (-\$1,000), ASN (RDA) Execution Adjustment (-\$828K), Section 8055: Congressional Proportionate Rescission (-\$182K), and miscellaneous department adjustments (-\$469K).

FY 2001: Section 8086: .7% Pro-Rata Reduction (-\$183K) and PL 106-554, Section 1403 Government-Wide Rescission (-\$57K).

## (U) Schedule:

NILE software test slipped from 2Q/00 to 4Q/00 due to the additional development required for the multi-link test tool. Link-22 design validation slipped from FY 00 to FY 02 as a result of the change in technical approach.

F/A-18 MIDS DT/OT testing has been realigned with F/A-18 master schedule

#### (U) Technical:

Analysis of CDLMS/Link-22 program enhancements indicated that current CDLMS system configuration would not support Link-22 processing requirements. Hosting Link-22 capability in U.S. systems requires that current CDLMS be upgraded to Next Generation C2P configuration to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions.

Multi-TADIL Capability (MTC) is the initial phase of Next Generation C2P that will provide multi-TADIL functionality for command ships, submarines and shore sites.

Phase one of MTC will support Link-11 and Link-16.

Next Generation C2P is required to provide Link-22 and Link-16 functionality joint range extension and high through put enhancement that will support all fleet requirements across diverse platforms in a common software baseline.

R-1 Shopping List - Item No 185-3 of 185-17 UNCLASSIFIED

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

DATE: JUNE 2001

(U) COST (Dollars in Thousands)

**PROJECT** 

NUMBER & FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY2006 FY2007 TO **TOTAL** TITLE **ACTUAL ESTIMATE ESTIMATE ESTIMATE ESTIMATE ESTIMATE ESTIMATE** ESTIMATE COMPLETE **PROGRAM** 

X1743 Link-16 Improvements

3,509 4,138 15,207

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Link-16 Improvements extends Link-16 technological improvements to existing and developing U.S. Navy data link systems, including Link-11 and Link-22. Near term Link-11 improvements include: Mobile Universal Link Translator System (MULTS) upgrade, Common Shipboard Data Terminal Set (CSDTS), Link-11 Baseline Freeze message standard work, and the NATO Improved Link-11 (NILE) Project. Link-22 will pass TADIL-J data elements beyond the line of sight (HF) using a Time Division Multiple Access (TDMA) protocol and the improved Link-11 waveform. The Common Data Link Monitoring System (CDLMS) will be upgraded to Next Generation Command and Control Processor (C2P) to accommodate the higher CPU speeds, update rate and memory capacity required for multi-TADIL processing functions. The Multi-TADIL Capability (MTC) is the initial phase of the Next Generation C2P architecture. Next Generation C2P will be based on open system hardware and software architecture, providing a system capable of supporting critical data link functions, including Link-22, Link-16 Joint Range Extension (JRE) and High Throughput Link-16. These projects will allow more effective employment of fleet units by increasing timeliness, accuracy, and content of tactical data transfer.

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

DATE: JUNE 2001

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

### 1. (U) FY 2000 ACCOMPLISHED

- (U) (\$1,979) Continue to design and develop combined CDLMS/Link-22 program enhancements which includes Multi-TADIL Capability (MTC) and Next Generation Command Control Processor (C2P). Develop systems level requirements and baseline CDLMS/Link-22 specifications/designs for systems integration.
- (U) (\$1,213) Complete Link-22 System Network Controller (SNC) software development. Link-22 program shall perform final SNC beta software verification and performance tests. Message standards and signal processing controller functions will be defined for U.S. implementation.
- (U) (\$317) Continue design and development of Subphase 2 software for the NILE Reference System (NRS).

### 2. (U) FY 2001 PLAN

- (U) (\$2,383) Continue to design and develop combined CDLMS/Link-22 program enhancements which includes design and development of Multi-TADIL Capability (MTC) and Next Generation Command Control Processor (C2P). Develop system specifications and performance baselines for MTC and Next Generation C2P. Conduct Preliminary Design Review.
- (U) (\$1,505) Complete Link-22 unique crypto designs, message standard and test tools for CDLMS/Link-22 system.
- (U) (\$250) Complete design and development of Subphase 2 software for the NILE Reference System (NRS).

#### 3. (U) FY 2002 PLAN

• (U) (\$6,906) Continue to develop combined CDLMS/Link-22 program enhancements. Integrate NILE SNC and System Processor Controller (SPC) developed software with CDLMS/Link-22 system. Develop and validate hardware and software design changes into CDLMS and CSDTS to implement Link-22. Complete MTC development and perform MTC system certification.

R-1 Shopping List - Item No 185-5 of 185-17 UNCLASSIFIED

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

DATE: JUNE 2001

• (U) (\$7,901) Continue Next Generation Command Control Processor (C2P) development. Complete development of detailed Next Generation C2P software design. Conduct Critical Design Review.

• (U) (\$400) Commence validation of Link-22 design to ensure interoperability with NILE Reference System (NRS) under NILE In-Service Support Phase III MOU.

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

NUMBER FY 2000 FY 2001 FY 2002 TITLE ESTIMATE ESTIMATE ESTIMATE

OPN Line 2614 ATDLS

18,402 18,977 11,715

Note: OPN includes procurement of hardware developed under Link-16 Improvements and ATDLS Integration Programs.

C. (U) ACQUISITION STRATEGY: NILE Reference System, Link-22 system development, CDLMS/Link-22 program enhancements and Next Generation C2P are utilizing existing cost plus contracts.

DATE: JUNE 2001

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

D. (U) SCHEDULE PROFILE:

FY 2000 FY 2001 FY2002 TO COMPLETE

Program
Link 22 IOC
Milestones
1Q/04

Next Gen C2P 1Q/04

Engineering Next Gen C2P PDR Next Gen C2P CDR

Milestones 2Q/01 3Q/02

T&E NILE SNC S/W Test CDLMS/Link-22 S/W test

Milestones 4Q/00 4Q/02

MTC Certification

3Q/02 Link-22

> DT 4Q/03 OT 1Q/04

Contract Milestones

> R-1 Shopping List - Item No 185-7 of 185-17 UNCLASSIFIED

> > Exhibit R-2a RDT&E: Project Justification (Project X1743)

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

Exhibit R-3 Cost Analysis (page 1	1)											
	Contract Method	Performing Activity & Location	Total PYs	FY01	FY01 Award	FY02C	FY02 Award	FY 03	FY03 Award	Cost To	Total	Target Value of
Cost Categories	& Type		Cost	Cost	Date	ost	Date	Cost	Date	Complete	Cost	Contract
NATO Improved Link Eleven	CPFF	Logicon	2,476	250	12/00					Î		
Link-22	WX	SPAWARSYSCTR San Diego, CA	3,261	620	Various	1,718	Various					
Link-22	CPFF	GAC, Inc.				1,000	Various					
Link-22	Various	Various	345	163	Various	1,125	Various					
C2P Improvements	Various	Various	2,377									
Multi-TADIL Capability (MTC)	Various	Various	855	491	Various	1,575						
Next Generation C2P	CPFF	APC	1,325	971	Various	4,443	Various					
Next Generation C2P Support	WX	SPAWARSYSCTR San Diego, CA				500	Various					
Next Generation C2P TDA	CPFF	APL/JHU		1,356	Various	2,906	Various					
NILE ISS/Interoperability	Various	Various				400	Various					
Subtotal Product Development			10,639	3,851		13,667						
Remarks												

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X1743

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: Link-16 Improvements

	Contract Method &	Performing Activity &	Total PYs	FY01	FY01 Award	FY02	FY02 Award	FY 03	FY03 Award	Cost to Complete	Total	Target Value of
Cost Categories	Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date		Cost	Contract
Test and Evaluation	Various	Various	272			500	Various					
Subtotal T&E			272			500						
Remarks												
Engineering Support and Travel	Various	Various	547	287	Various	1,040	Various					
Subtotal Management			547	287		1,040						
Subtotal Management Remarks			547	287		1,040						

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

(U) COST (Dollars in Thousands)

PROJECT

NUMBER & FY 2000 FY 2001 FY 2002 FY 2003 FY 2004 FY 2005 FY 2006 FY 2007 TO **TOTAL** TITLE **ACTUAL ESTIMATE ESTIMATE ESTIMATE ESTIMATE ESTIMATE ESTIMATE ESTIMATE** COMPLETE **PROGRAM** 

X2126 ATDLS Integration

39,197 21,867 24,155

- A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ATDLS Integration program will integrate the Multifunctional Information Distribution System Low Volume Terminal (MIDS-LVT) Link-16 terminal into U.S. Navy platforms. This multinational (U.S., France, Germany, Italy, and Spain) cooperative development program was established to design, develop, and deliver low-volume lightweight tactical information system terminals for U.S. and foreign fighter aircraft, helicopters, ships and ground sites. The terminals are designed as a Pre-Planned Product Improvement (P³I) of the Joint Tactical Information Distribution System (JTIDS) Time Division Multiple Access (TDMA) Class II terminal. The goal of the MIDS-LVT program is to produce a terminal that is smaller, lighter, fully compatible with, and as capable as the JTIDS TDMA Class 2 terminals, but suitable for use in platforms that cannot accommodate the bulkier, heavier JTIDS TDMA Class II equipment. This project includes the costs to integrate and test MIDS on the Navy's F/A-18 and selected ship platforms. ATDLS Integration of the MIDS-LVT will also provide selected U.S. Navy and U.S. Marine Corps tactical aircraft, U.S. Navy ships, and U.S. Marine Corps ground units with cryptosecure, jam resistant, low-probability-of-exploitation communication of tactical data and voice at a high data rate. It will have additional capabilities of common grid navigation and automatic relay inherent in the equipment that will enable long-range communication and provide jam resistance. The system will be interoperable among all services and NATO/Allied users equipped with MIDS-LVT or JTIDS Class II/IIA.
- (U) ATDLS Improvement program also develops new and improved capabilities for Navy TADIL-J users. The Command and Control Processor (C2P) is a software development effort that provides an interface between the TADILs (Link 4A, 11, and 16) and major surface ship Command and Control Systems (Advanced Combat Direction System (ACDS) and AEGIS C&D). Common Data Link Management System (CDLMS) is a Pre-planned Product Improvement (P3I) of the C2P. The CDLMS will provide translation between TADILs and isolate all tactical data link equipment, message standards and protocols from tactical information processors. This will provide a flexible capability for rapidly exchanging tactical information using a single database for translating various link formats while remaining completely independent of communications equipment and tactical data computing systems. Development of new capabilities in ATDLS includes Low Cost Integration and Dynamic Network Management. Low Cost Integration effort develops a Link-16 transmit capability that will be provided to Navy aircraft platforms as a positive Combat ID method of identifying friendly units in the battlespace. Dynamic Network Management will provide automatic reconfiguration of Link-16 networks that respond instantly to emergent warfighter requirements in the field.

R-1 Shopping List - Item No 185-10 of 185-17 UNCLASSIFIED

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

DATE: JUNE 2001

- (U) This project also funds: (1) the development required to accommodate expanded Link-16 operational capabilities for additional warfare areas, (2) development of automated network management aids, and (3) related systems engineering and contractor support efforts.
- (U) Additional terminal development costs are funded in program element 0604771D.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. FY 2000 ACCOMPLISHED

- (U) (\$29,009) Continue F/A-18 MIDS integration; software development; and aircraft modifications and testing.
- (U) (\$2,682) Continue TADIL-J System Engineering to include investigating future capabilities and enhancements and ensuring Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension and enhanced throughput.
- (U) (\$4,246) Continue Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.
- (U) (\$3,260) Continue MIDS on Ship development and operational testing.

#### FY 2001 PLAN

- (U) (\$17,190) Continue F/A-18 MIDS integration; software development; aircraft modifications and testing; and interoperability certification testing.
- (U) (\$1,503) Continue TADIL-J System Engineering to include investigating future capabilities and enhancements and ensuring Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension and enhanced throughput.
- (U) (\$1,945) Complete Performance Upgrades including C2P Model 5 improvements, Common Data Link Management System (CDLMS) development, and Satellite-TADIL-J development.
- (U) (\$1,229) Complete MIDS on Ship development and operational testing.

R-1 Shopping List - Item No 185-11 of 185-17 UNCLASSIFIED

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

DATE: JUNE 2001

## 3. FY 2002 PLAN

- (U) (\$19,972) Complete F/A-18 MIDS integration software, flight, development and certification testing.
- (U) (\$1,863) Continue TADIL-J System Engineering to include investigating future capabilities and enhancements and ensuring Naval upgrades are interoperable with Joint U.S. and allied forces such as joint range extension and enhanced throughput.
- (U) (\$2,320) Integrate MIDS on Ship with Model 5 Combat System and conduct testing.

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BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

DATE: JUNE 2001

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

NUMBER	FY 2000	FY 2001	FY 2002		
TITLE	<b>ESTIMATE</b>	<b>ESTIMATE</b>	<b>ESTIMATE</b>		
APN LINE LI 052500 F/	/A-18 51,555	49,392	7,834		
DDT0 E D A					
RDT&E,DA	28,544	16,100	16,572		
	18,402	18,977	11,715		

Note: OPN includes procurement of hardware developed under Link-16 Improvements and ATDLS Integration Programs.

SCN - Funding for ATDLS hardware is not separately identified in the SCN budget exhibits.

### RELATED RDT&E:

PE 0604771D/P771 - Link-16: Link-16 systems engineering support. PE 0604771D/P773 - MIDS: MIDS-LVT terminal development.

C. (U) ACQUISITION STRATEGY: F/A-18 MIDS aircraft integration is utilizing cost plus fix fee contracts on an R&D Basic Ordering Agreement with Boeing. MIDS integration and testing, TADIL-J systems engineering, and performance upgrades development are utilizing existing cost plus contracts.

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

DATE: JUNE 2001

D. (U) SCHEDULE PROFILE

<u>FY 2000</u> <u>FY 2001</u> <u>FY2002</u> <u>TO COMPLETE</u>

Program LRIP Rvw 3Q/00 DAB MS III 3Q/01

Milestones IOC 3Q/03 Air

Engineering Milestones

T&E F/A-18-OT-IIA-2-2Q/00 F/A-18 DT-IIA-6 2Q/01

Milestones F/A-18 DT-IIA-5 3Q/00 F/A-18 OT-IIA-3 1Q/01 F/A-18-OT-IIA-4-4Q/01

F/A-18 DT-IIA-7 1Q/02

F/A-18 TECHEVAL 3Q/02 F/A-18 EMI/EMC 3Q/03

F/A-18 FOT&E 2Q/04

Ship DT/OT-IIB-1 4Q/00 Ship DT/OT-IIB-2 2Q/01 Ship FOT&E 2Q/02

Contract MIDS LRIP contract 3Q/00

Milestones

R-1 Shopping List - Item No 185-14 of 185-17 UNCLASSIFIED F/A-18 OPEVAL 1Q/03

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

Exhibit R-3 Cost Analysis (page	1)											
APPROPRIATION: RDT&E,N		PROGR	AM ELEMI	ENT: 02056	504N			Tactical	l Data Links	}		
BUDGET ACTIVITY: 7	1		1	1	1	Т	1			-		
	Contract	Performing	Total		FY01		FY02		FY03			Target
	Method	Activity &	PYs	FY01	Award	FY02	Award	FY03	Award	Cost To	Total	Value of
Cost Categories	& Type	Location	Cost	Cost	Date	Cost	Date	Cost	Date	Complete	Cost	Contract
F/A-18 Integration	PD	NAVAIRSYSCOM	121,701	12,346	Various	14,588	Various					
		PAX River, MD										
TADIL-J System Engineering	WX	SPAWARSYSCTR	25,082	1,228	Various	1,605	Various					
The Division of the second	** .	San Diego,CA	2 21 5					1				
TADIL-J System Engineering	Various	Various	3,315									
MIDS on Ship	CPIF	BAE Systems Wayne, NJ	11,488	500	Various							
MIDS on Ship	Various	Various	43,078	365	Various	1,150	Various					
Performance Upgrades	WX	SPAWARSYSCOM	9,157	1,876	Various	138	Various					
		San Diego, CA										
Performance Upgrades	Various	Various	4,783	410	Various	565	Various					
Air Defense System Integrator	CPFF	Adv Programming	2,059									
		Concepts, TX										
Dual Net Link-11	WX	Various	1,866									
Korean Air Defense Sys Impr	CPFF	JHU/APL	900									
Low Cost Integration	Various	Various										
Dynamic Network	Various	Various										
Management												
Subtotal Product			223,429	16,725		18,046			_			
Development												
Remarks												

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

Exhibit R-3 Cost Analysis (page 2	)											
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 7	BUDGET ACTIVITY: 7			M ELEM	ENT: 02056	04N	Tactical Data Links					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contrac t
Subtotal Support												
Remarks			1									
					1			,	1			
Test and Evaluation	Various	Various	3,975	185	Various	150	Various	150				<u> </u>
MIDS F/A-18 T&E	WX	SPAWARSYSCOM San Diego, CA	5,479	2,804	Various	2,933	Various	3,281				
MIDS F/A-18 T&E	Various	Various	5,190	362	Various	565	Various	725				
MIDS on Ship T&E	WX	SPAWARSYSCOM San Diego, CA	665	220	Various	900	Various					
MIDS Test Assets	SS/CPAF /IF	MIDSCO Fairfield, NJ	6,594									
Subtotal T&E			21,903	3,571		4,548		4,156				
Remarks												

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0205604N PROJECT NUMBER: X2126

PROGRAM ELEMENT TITLE: Tactical Data Links PROJECT TITLE: ATDLS Integration

Exhibit R-3 Cost Analysis (page 2)												
APPROPRIATION: RDT&E,N			PROGRA	M ELEMI	ENT: 02056	504N	Tactical Data Links					
BUDGET ACTIVITY: 7												
Cost Categories	Contract	Performing Activity	Total		FY01		FY02		FY03			Target
	Method	& Location	PYs	FY01	Award	FY02	Award	FY03	Award	Cost to	Total	Value of
	& Type		Cost	Cost	Date	Cost	Date	Cost	Date	Complete	Cost	Contract
ATDLS Engineering	MP	MITRE	1,216	60								
Engineering Support and Travel	Various	Various	2,479	1,511	Various	1,561	Various	1,764				
Subtotal Management			3,695	1,571		1,561		1,764				
Total Cost			249,027	21,867		24,155		26,824				