CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**						R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET COMMUNICATIONS					
COST ($ in Millions)	Prior Years Cost		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**129.1**	**0.0**	**12.0**	**23.1**	**19.8**	**19.7**	**16.5**	**13.9**	**14.1**	**Continuing**	**Continuing**
0725 Communications Automation	**19.9**		**4.8**	**3.2**	**2.1**	**2.1**	**2.7**	**2.7**	**2.8**	**Continuing**	**Continuing**
1083 Shore to Ship Communications	**99.9**		**6.3**	**12.2**	**17.7**	**17.6**	**13.9**	**11.1**	**11.3**	**Continuing**	**Continuing**
0795 Support of MEECN	**6.0**		**1.0**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**7.8**
9100 Programmable Integrated Communications Terminals	**3.3**		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.3**
9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)	**0.0**		**0.0**	**6.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**6.9**
Quantity of RDT&E Articles											

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

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. It includes Tactical Messaging (formerly Naval Modular Automated Communications System/Single Messaging Solution II (NAVMACS/SMSII), Digital Wideband Transition System (DWTS) Low-Data Rate (EPLRS), Joint Network Management System (JNMS), Automated Digital Network System (ADNS), and Naval Global Directory Services.

In FY 04 the Program of record Name changed to Tactical Messaging in order to better depict the latest technology capabilities being developed. As in previous years Tactical Messaging (formerly NAVMACS/SMSII) develops joint/combined individual and organizational message handling to US Naval ships and submarines, United States Marine Corp (USMC) vans, and selected Military Sealift Command (MSC) and United States Coast Guard (USCG) platforms. Tactical Messaging (NAVMACS II/SMS) develops fleet interface to Defense Messaging System (DMS) and legacy ashore messaging systems.

DWTS Low-Data Rate (EPLRS) Navy requires a digital wideband capability, which can be used in amphibious operations where a fixed DWTS station cannot be used. System must be interoperable with Army and Marine Corps EPLRS system. DWTS Block Upgrade BRAVO improves the fixed DWTS station to operate at higher bandwidths with greater reliability than the current system.

The Joint Network Management System (JNMS) is a CINC, Commander, Joint Forces (CJF) joint communications planning system with Department of the Army as the Executive Agent. It is intended to be an automated software system including capabilities for planning and engineering, monitoring, control and reconfigurations, spectrum management and security.

The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Military SATCOM multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. This project has extremely high visibility within the DoD and United States Congress. The project was moved to PEO C4I & Space, PMW 176 from the United States Air Force starting in FY04 to better meet the requirements, deadlines, and funding priorities established for the project.

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-7**	R-1 ITEM NOMENCLATURE PE: 0204163N TITLE: FLEET COMMUNICATIONS

ADNS provides automated routing and switching of Tactical and Strategic C4I data via Transmission Control Protocol (TCP/IP) networks linking deployed Battle Group units with each other and with the DISN ashore via multiple Radio Frequency (RF) paths. Consists of Commercial Off-The-Shelf (COTS) non-developmental Joint Tactical Architecture (JTA) compliant hardware (routers, processors, switches) and commercial Y2K compliant software (VxWorks toolkit) in a standardized, scalable shock qualified rack design. Provides Internet Protocol (IP) connectivity afloat and ashore. Merges multiple redundant stove pipe communications circuits and efficiently manages RF assets resulting in better throughput using existing RF media. Line includes Network Operation Centers (NOCs) Ashore.

Naval Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations to include, but not limited to, Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; Public Key Infrastructure (PKI)-enablement of applications/devices; and Network Management. The Naval Global Directory Services will leverage the Afloat deployed White Pages to construct individual ship Afloat Full Service Directories which will create a foundation for further development, over time, to create a ship-to-shore and ship-to-ship Naval Global Directory Services.

The Shore to Ship Communications System develops communications systems elements which provide positive command and control of deployed ballistic missile submarines (SSBNs). Provides the communication elements for continuous assessment of the command and control link between Secretary of Defense and the ballistic missile platforms. Provides the tools for strategic command and control planning to deployed SSBNs including shore infrastructure for EAM distribution.

Minimum Essential Emergency Communications Network (MEECN) is the Tri-Service transmission system, including land-based segment, which ensured delivery of Emergency Action Messages (EAM) to our strategic platforms.

The programmable Integrated Communications Terminal (PICT) is a user voice terminal designed to operate with Integrated Service Digital Network (ISDN) switches and legacy switches to support both interior and radio (external) shipboard communications. The Digital Modular Radio (DMR) system will be integrated into submarine communications systems that require remote control capability to the radio for various end user applications. These integrated communications systems will include both internal phone and internal communications such as the Integrated Voice Network (IVN) as well as external radio communications. This was a Congressional Add in FY02 only.

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. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 0725 Communications Automation					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**19.9**	**4.8**	**3.2**	**2.1**	**2.1**	**2.7**	**2.7**	**2.8**		**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. Tactical Messaging, formerly (The Naval Modular Automated Communications System II (NAVMACS II)/Single Messaging Solution (SMS)) is the network centric Internet Protocol (IP) solution for the processing, storage, distribution and forwarding of General Service and Defense Messaging System (DMS) organizational messages to the user's desktop throughout the IT-21 Local Area Network (LAN)/Wide Area Network (WAN). The Joint Network Management System (JNMS) is a CINC, Commander, Joint Forces (CJF) joint communications planning system with the Department of the Army as the Executive Agent. It is intended to be an automated software system including capabilities for planning and engineering, monitoring, control and reconfigurations, spectrum management and security. Automated Digital Network System (ADNS) provides automated routing and switching of Tactical and Strategic C4I data via Transmission Control Protocol (TCP/IP) networks linking deployed Battle Group units with each other and with the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) paths. Consists of Commercial Off-The-Shelf (COTS) non-developmental Joint Tactical Architecture (JTA) compliant hardware (routers, processors, switches) and commercial Y2K compliant software (VxWorks toolkit) in a standardized, scalable shock qualified rack design. Provides Internet Protocol (IP) connectivity afloat and ashore. Merges multiple redundant stove pipe communications circuits and efficiently manages RF assets resulting in better throughput using existing RF medial. Line includes Network Operation Centers (NOCs) Ashore. Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations to include, but not limited to, Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; PKI-enablement of applications/devices; and Network Management. The Global Directory Services will leverage the Afloat deployed White Pages to construct individual ship Afloat Full Service Directories which will create a foundation for further development, over time, to create a ship-to-shore and ship-to-ship Global Directory Services.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
ADNS	1.248	0.374	0.428
RDT&E Articles Quantity			

FY03 Accomplishments: Conducted analysis, testing and demonstration in support of future technology refresh. Began development of initial traffic management and Quality of Service (QoS) capabilities. Demonstrated policy routing scheme. Initiated analysis of Voice over Internet Protocol (VoIP) alternatives.
FY04: Continue development of converged voice, video and data capability within ADNS. Continue analysis of VoIP alternatives. Demonstrate VoIP capability. Develop advanced methods to implement prioritization of data using message traffic precedence, dynamic bandwidth management, and asymmetrical operations under Emission Control (EMCON) conditions. Analyze and test line of sight (LOS) and airborne networking. Devise solutions for Allied and coalition interoperability.
FY05: Develop methods for implementing Internet Protocol version 6 (IPv6). Devise solutions for dual stack(IPv4 and IPv6) policy routing. Develop methodology for implementing Black Routing within ADNS. Develop advanced traffic management and control and Quality of Service (QoS) capabilities. Demonstrate dynamic routing scheme.

	FY 03	FY 04	FY 05
Tactical Messaging (NAVMACS)	1.896	1.302	1.214
RDT&E Articles Quantity			

FY03 Accomplishments: Completed HW/SW test and integration for SMS ph2. Completed development and test efforts for multi-enclave messaging administration terminals. Successfully tested DMS Afloat at the Joint Interoperability Certification (JIC) Excercise as part of JUICE '03. Continued test and evaluation of emerging technology and product upgrades such as DMS Directory System Enhancements (DSE Upgrade), Maintenance Release 1 (MR1), and Windows 2000 migration as directed by DISA, DMDS 6.2, and GOTS Delta products. Commenced architecture planning for DMS Client/Server convergence with ISNS.
FY04: Continue development and test efforts for emerging technology and product upgrades such and DMS (DSE Upgrade), Maintenace Release 2 (MR2), complete Windows 2000 migration, IP broadcast integration, Web based solutions, and COTS SW/HW refresh for all enclaves and USN platforms. Support DICE '04 Joint Operational Testing.
FY05: Continue development and test efforts for emerging technology and product upgrades such as DMS, profilers, IP broadcast, Web based solutions, and COTS SW/HW refresh for all enclaves and USN platforms. Conduct Follow-on Operational Test and Evaluation (FOT&E).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Global Directory Services	1.635	1.169	0.438
RDT&E Articles Quantity			

FY03 Accomplishments: Provided continuing design and development efforts that built an enterprise-wide directory service environment by bridging efforts developed in FY02. Specifically provided for the development of a global meta-directory service that integrated disparate directory services used throughout the Naval community. Efforts also included developing a directory service architecture to support the development of Universal E-mail and provided developmental engineering support for the new functionality that interacted with the Navy/Marine Corps White Pages and related directory service environments.
FY04: Continue the development of the Naval Global Directory Service (NGDS) -- enterprise-wide directory service environment . Assist in the convergence of NMCI, IT21, and OCONUS environments. Provide an infrastructure for the development and integration of new Navy Portal functionality. Develop an architecture that provides the ability to integrate with the Global Mail Routing Service (GMRS). Provide developmental engineering support for new network functionality within the shipboard environment.
FY05: Continue the development of the Naval Global Directory Service (NGDS) -- enterprise-wide directory service environment. Assist in the continuing integration of critical NMCI, IT21, and OCONUS components. Develop an architecture that will provide the ability to establish Universal Accounts. Provide developmental engineering support for ship-to-shore communications and data sharing.

	FY 03	FY 04	FY 05
JNMS	0.000	0.350	0.000
RDT&E Articles Quantity			

FY04: Support testing of JNMS for Integrated Shipboard and Network Systems (ISNS), ADNS, and lab activities for security accreditation of the system.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	4.646	3.271	2.935
FY05 President's Budget:	4.779	3.195	2.080
Total Adjustments	0.133	-0.076	-0.855
Summary of Adjustments			
Issue 19004 Tech Issue: Naval Global Directory Service (NGDS)			-0.830
Issue 66556 FY03_SBIR_5-May-03	-0.064		
Issue 67689 MANPOWER			-0.011
Issue 66961 SPAWAR Service Cost Center Adjustments		-0.008	-0.006
Issue 68849 FY03 Update	0.197		-0.005
Issue 68041 Section 8094: Management Improvements		-0.009	
Issue 68060 Section 8029: FFRDC Reduction		-0.031	
Issue 68066 Section 8126: Efficiencies/Revised Econ . Assumptions		-0.028	
Issue 69025 WCW - R&D - SPAWAR - PBD 430			-0.002
Issue 69045 PBD 426 Rates - SSC			0.006
Issue 69492 PBD 604 Inflation			-0.006
Issue 69512 PBD 604 Non Purchase Inflation			-0.001
Subtotal	0.133	-0.076	-0.855

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	0725 Communications Automation

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3050 – Comm Auto - NAVMACS	9.248	7.230	10.519	11.834	1.053	2.719	3.008	Continuing	Continuing
3050 – Comm Auto – JNMS	0.000	5.682	1.396	1.687	1.930	2.118	2.170	Continuing	Continuing
3050 – Comm Auto – ADNS	43.682	18.908	41.474	40.992	35.781	32.939	33.962	Continuing	Continuing

(U) E. ACQUISITION STRATEGY: *

ADNS: Evolutionary acquisition approach with overlapping development and implementation phases for differing incremental baselines. Use existing competitively awarded contracts during the initial production phase with plans to introduce innovative contract types that implement changes consistent with acquisition streamlining initiatives. Aggressively leverage COTS products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Employ many types of advantageous contract vehicles which provide flexibility, decreased contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

NAVMACS: The Tactical Messaging acquisition approach has evolved according to key technology advances, resulting incremental developmental phases, and the principals of acquisition reform. While initial production units were acquired through competitively awarded vehicles, future contracting will also embrace acquisiton streamlinging initiatives in addition to maintaining the benefits of competitive, best value contracting. The technical solutions and areas of acquisition reform will continue to emphasize procurement of best-of-breed Commercial Off The Shelf (COTS) items that provide spin-off savings in installation, spare parts support, integration, test and evaluation, and training and maintenance.

Acquisition, management and contracting strategies are to support:

- JNMS, that provides an automated software system including capabilities for planning and engineering, monitoring, control and reconfigurations, spectrum management and security
- GDS, to support a variety of network operations that include Single Point of Administration (SPA) and Unified Account Management; Software Distribution; White/Yellow/Blue Pages; Menu, Profile, and Application Management; PKI-enablement of applications/devices; and Network Management. ALL management oversight by SPAWAR.

(U) F. MAJOR PERFORMERS: **

N/A

*** Not required for Budget Activities 1,2,3, and 6**

**** Required for DON and OSD submit only.**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 Communications Automation						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC	2.814								Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	PO	SSC	8.207	0.637	Dec 2002	0.251	Dec 2003	0.268	Dec 2004		Continuing	
Prime Mission Product	PO	SSC	1.583	1.278	Dec 2002	0.687	Dec 2003	0.610	Dec 2004		Continuing	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Systems Engineering	CPAF	MAXIM (PMTO)	0.348	0.060	Dec 2002	0.060	Dec 2003	0.060	Dec 2004		Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			12.952	1.975		0.998		0.938		0.000	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 Communications Automation						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support											0.000	
Software Development	Var	Various	1.411	1.635	Dec 2002	1.169	Dec 2003	0.438	Dec 2004		Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.411	1.635		1.169		0.438		0.000	Continuing	

Remarks:

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N Shore to Ship Communications Systems			PROJECT NUMBER AND NAME 0725 Communications Automation							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PO	SSC	2.982	0.410	Dec 2002	0.490	Dec 2003	0.165	Dec 2004		Continuing	
Operational Test & Evaluation	MIPR	OPTEVFOR	0.315								0.315	
Operational Test & Evaluation	Var	Various	0.350								0.350	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			3.647	0.410		0.490		0.165		0.000	Continuing	
Remarks:												
Contractor Engineering Support	MPIR	US Army, Monmouth, NJ		0.123	Dec 2002	0.123	Dec 2003	0.123	Dec 2004		0.369	
Government Engineering Support											0.000	
Program Management Support	PO	SSC	1.317	0.249	Dec 2002	0.138	Dec 2003	0.131	Dec 2004		Continuing	
Program Management Support	CPAF	BAH	0.599	0.387	Dec 2002	0.277	Dec 2003	0.285	Dec 2004		Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.916	0.759		0.538		0.539		0.000	Continuing	
Remarks:												
Total Cost			19.926	4.779		3.195		2.080		0.000	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Shore to Ship Communications Systems

PROJECT NUMBER AND NAME: 0725 Communications Automation/ADNS

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	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			I OC Incr 1 ☆																									
Prototype Phase	CDR Incr 1																											
System Development	▲ Sys Dev Incr 1																											
Test & Evaluation Milestones							DT Incr 1 ▲	OT Incr 1 ▲																				
Development Test																												
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

1. Initial OPEVAL Q2, 01. Subsequent discussions between OPNAV, COTF, and Program Office agreed the submarine variant of ADNS required additional Operational testing.

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Shore to Ship Communications Systems

PROJECT NUMBER AND NAME: 0725 Communications Automation/ADNS

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	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									IOC Incr 2 ☆																			
Prototype Phase	Proto Type Phase Incr 2																											
System Development	SDR Incr 2 ▲	PDR Incr 2 ▲	▲	CD R Incr 2																								
	Sys Dev Incr 2																											
Test & Evaluation Milestones									DT Incr 2 ▲		OT Incr 2 ▲																	
Development Test																												
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS	

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	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																	IOC Incr 3 ☆											
Prototype Phase										Proto Type Phase Incr 3																		
System Development												Incr 3 SDR ▲		PDR Incr 3 ▲	CDR Incr 3 ▲													
												Sys Dev Incr 3																
Test & Evaluation Milestones																	DT Incr 3 ▲											
Development Test																			OT Incr 3 ▲									
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N Shore to Ship Communications Systems	PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS	

Fiscal Year	2003				2004				2005				2006				2007				2008				2009			
	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																							IOC Incr 4 ☆						
Prototype Phase																Proto Type Phase Incr 4												
System Development																	Incr 4 SDR ▲		PDR Incr 4 ▲	CDR Incr 4 ▲								
																	Sys Dev Incr 3											
Test & Evaluation Milestones																							DT Incr 4 ▲					
Development Test																										OT Incr 4 ▲		
Operational Test																												
Deliveries																												

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT I								
*MAGTF Router **(MR)** R-4 #1*								
Prototype Phase								
System Design Review (SDR)								
Preliminary Design Review (PDR)								
System Development	1-3Q							
Critical Design Review (CDR)	1Q							
IOC	4Q							
Developmental Testing (DT)		3Q						
Operational Testing (OT)		4Q						
INCREMENT II								
*Initial Traffic Management, Shore **(TMS)** R-4 #2*								
Prototype Phase	1-4Q							
System Design Review (SDR)	1Q							
Preliminary Design Review (PDR)	2Q							
System Development	1-3Q							
Critical Design Review (CDR)	3Q							
IOC			1Q					
Developmental Testing (DT)			1Q					
Operational Testing (OT)			3Q					
*Intitial QOS **(IQOS)** R-4 #2*								
Prototype Phase	1-4Q							
System Design Review (SDR)	1Q							
Preliminary Design Review (PDR)	2Q							
System Development	1-3Q							
Critical Design Review (CDR)	3Q							
IOC			1Q					
Developmental Testing (DT)			1Q					
Operational Testing (OT)			3Q					

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT III								
*Voice Over IP **(VOIP)** R-4 #3*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*Advanced QOS **(AQOS)** R-4 #3*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*Advanced Traffic Management **(ADVTM)** R-4 #2*								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			
*IPV6 **(IPV6)***								
Prototype Phase			2Q					
System Design Review (SDR)			4Q					
Preliminary Design Review (PDR)				1Q				
System Development			4Q	2Q				
Critical Design Review (CDR)				2Q				
IOC					Q1			
Developmental Testing (DT)					Q1			
Operational Testing (OT)					Q3			

CLASSIFICATION:

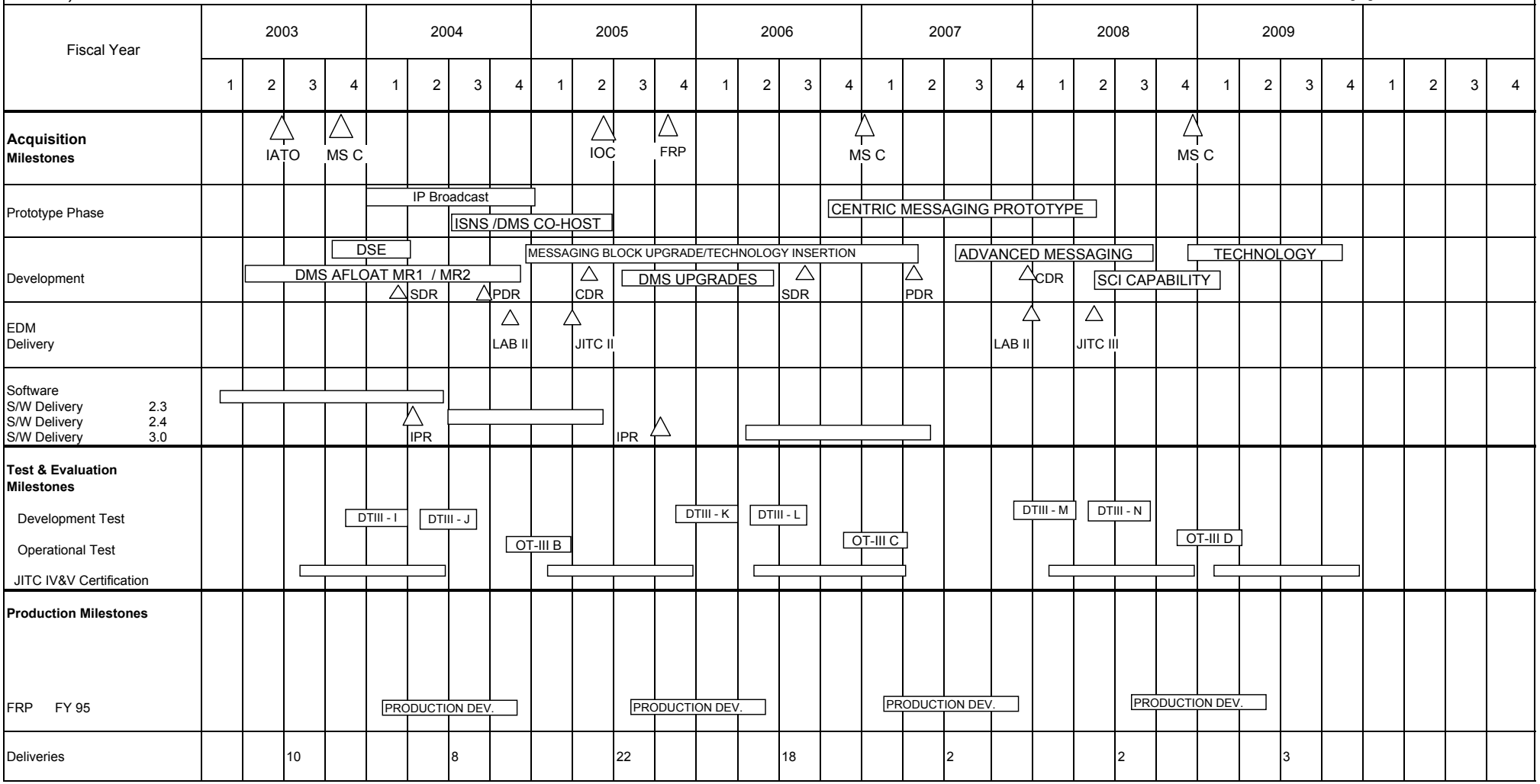
Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N Shore to Ship Communications Systems				PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
INCREMENT IV								
*Black Routing **(BR)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	
*JTRS Integration **(JTRSI)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	
*Transformational Communications **(TC)***								
Prototype Phase				4Q				
System Design Review (SDR)					2Q			
Preliminary Design Review (PDR)					3Q			
System Development					2-4Q			
Critical Design Review (CDR)					4Q			
IOC						3Q		
Developmental Testing (DT)						3Q		
Operational Testing (OT)							1Q	

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Fleet Communications	0725 Communications Automation/Tactical Messaging



* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 0725 Communications Automation/Tactical Messaging			
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
IATO	2Q-3Q							
IOC			2Q					
Milestone C	4Q			4Q		4Q		
FRP			4Q					
IP Broadcast		1Q-4Q						
ISNS / DMS CO-HOST		3Q-4Q	1Q-2Q					
Centric Messaging Prototype				4Q	1Q-4Q	1Q-2Q		
Build 2.3/DMS Integration	1Q							
DMS System Eng.	3Q	1Q						
DMS Afloat MR 1 / MR 2	1Q-4Q	1Q-4Q						
Messaging Block Upgrade/Tech Insertion		4Q	1Q-4Q	1Q-4Q	1Q-2Q			
DMS Upgrades			3Q-4Q	1Q-2Q				
Advanced Messaging					3Q-4Q	1Q-3Q		
SCI Capibility						2Q-4Q	1Q	
Technology						4Q	1Q-4Q	
CDR			2Q		4Q			
SDR		1Q-2Q		3Q				
PDR		3Q-4Q			2Q			
EMD - Lab		4Q			4Q	1Q		
EMD - JITC			1Q-2Q			2Q		
S/W Delivery 2.3	2Q-4Q	1Q-3Q						
S/W Delivery 2.4		3Q-4Q	1Q-3Q					
S/W Delivery 3.0				2Q-4Q	1Q-3Q			
IPR		2Q-3Q	4Q					
Development Test	4Q	1Q, 2Q-3Q	4Q	1Q, 2Q-3Q	4Q	1Q, 2Q-3Q		
Operational Test		4Q	1Q-2Q	4Q	1Q	4Q	1Q	
JITC IV&V Certification	1Q, 3Q-4Q	1Q-2Q	1Q-4Q	2Q-4Q	1Q	1Q-4Q	1Q-4Q	
Deliveries	10	8	22	18	2	2	3	

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**99.9**	**6.3**	**12.2**	**17.7**	**17.6**	**13.9**	**11.1**	**11.3**		**Continuing**	**Continuing**
RDT&E Articles Qty											**0**

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

This project develops communications systems elements that provide positive command and control of deployed ballistic missile submarines (SSBNs) and fleet submarine broadcast connectivity to SSNs, SSGNs and SSBNs. This project provides enhancements to the shore-to-ship transmitting systems and provides submarine unique capabilities to the Network Operation Center (NOC) and Broadcast Control Authority (BCA). The NOC and the BCA provide the oversight and control for all fixed submarine broadcasts. Evaluation of this communications system performance is provided via the Strategic Communications Assessment Program (SCAP). The Continued Evaluation Program (CEP) provides constant assessment of the effectiveness of the end-to-end network. The Submarine Operating Authority (SUBOPAUTH) includes both Submarine Communications and Operational Control (OPCON) at shore sites. A SUBOPAUTH architecture provides for back-up capability among the four BCA/OPCONs to ensure Continuity of Operations (COOP) in the event of a BCA outage. The Common Submarine Radio Room (CSRR) integrates COTS and GOTS components into a single radio room configuration for all classes of submarines. The CSRR design is based on the Virginia class radio room and is adapted for each platform's hull shape and mission needs. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed VLF (FVLF) transmit systems are evaluated and tested through the High Voltage Improvement Program (HVIP). EAM 2010 will provide a communications approach in support of the Joint Operational Architecture (JOA) for time-critical EAMs to be disseminated across Areas of Responsibility (AOR's) in support of Joint operations This project implements the Joint Staff EAM Board of Directors (BoD) direction to ensure an acquisition strategy exists for a viable long-term EAM dissemination solution (EAM 2010) and that near term enhancements enable the interim hybrid solution to have an infrastructure to allow life sustainment until a replacement system comes on-line circa 2010. A VLF shore transmit terminal will be developed for 6 Broadcast Transmit Sites (BTS). Development of the terminal will use technology and designs common to an airborne terminal planned for the E-6B Airborne Command Post (ABNCP).

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
High Voltage Improvement Program	0.388	0.350	0.431	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Completed development of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites. Initiated development of electrically small antennas for VLF/LF transmit applications.
FY04: Complete testing of system to detect onset of corona breakdown which will provide a heightened protection to present day carrier cutoff systems at FVLF sites. Complete development of electrically small antennas for VLF/LF transmits applications. Begin investigation methods for providing additional high voltage performance margin for helix house exit bushings and guy/top hat insulators.
FY05: Complete development of remote corona monitoring/sensing system capability for FVLF sites. Complete investigation on helix house bushings and guy insulators. Begin the investigation into new materials for sustained long term operation in high electromagneticfields.

	FY 03	FY 04	FY 05	
Common Submarine Radio Room (CSRR)	0.925	0.950	0.950	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued engineering, integration and test for CSRR architecture and component upgrades and completed development and testing of MCS capabilities 1, 2, and 3.
FY04: Complete engineering and integration of SSBN variant of CSRR.
FY05: Complete land-based testing and certification of SSBN variant of CSRR. Conduct operational assessment. □

	FY 03	FY 04	FY05	
SCAP/CEP	3.882	4.170	4.817	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued SCAP, conducted CEP and strategic connectivity threats, and performed analysis.
FY04: Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis.
FY05: Continue SCAP, conduct CEP and strategic connectivity threats, and perform analysis. Extend analysis to cover VLF shore conectivity paths and MILSTAR monitoring.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
Shore Internet Protocol	0.700	0.000	0.000	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Completed research and development necessary for development of shore based submarine unique capabilities at the NOC and BCA.

	FY 03	FY 04	FY 05	
Concept Development/Systems Planning	0.375	0.916	1.262	
RDT&E Articles Quantity				

FY03 ACCOMPLISHMENTS: Continued design concept and initial feasible studies for integrated FVLF dynamic control system.
FY04: Complete design concept and initial feasible studies for integrated FVLF dynamic control system. Begin development of methods to provide the operational flexibility of dynamic allocation of the Fixed Submarine Broadcast System (FSBS) bandwidth.
FY05: Continue development of dynamic allocation capability of the FSBS bandwidth. Begin development of coding and compression necessary to significantly increase the equivalent data throughput. Demonstrate concept on the air.

	FY 03	FY 04	FY 05	
SUBOPAUTH	0.000	1.659	2.768	
RDT&E Articles Quantity				

FY04: Develop architecture to ensure automated SUBOPAUTH back-up strategy to support Continuity of Operations (COOP).
FY05: Develop automated toolsets to facilitate ease in manning burden to support operational and broadcast control for submarines.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
EAM 2010	0.000	4.173	4.660	
RDT&E Articles Quantity				

FY04: Conduct an end-to-end assessment necessary to support the baseline of the current system and support the Analysis of Alternatives and Initial Capabiltiies Description (ICD) for future capabilities.
FY05: Implement life extension actions identified in the end-to-end assessment. Develop computer modeling and simulations. Initiate the acquisition program process and continue the EAM 2010 Analysis of Alternatives. Initiate the development of the prototype.

	FY 03	FY 04	FY 05	
VLF Transmit Terminal	0.000	0.000	1.324	
RDT&E Articles Quantity				

FY05: Shore site development and integration of a VLF transmit terminal with elements common with terminals planned for the E-6B Airborne Command Post (ABNCP).

	FY 03	FY 04	FY 05	
VLF Channel Modes	0.000	0.000	1.492	
RDT&E Articles Quantity				

FY05: Develop architecture to support implementation of a unified mode in the VLF transmit terminal common to Navy and Air Force applications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Fleet Communications	1083 Shore to Ship Communications Systems

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	6.539	12.386	17.334
FY05 President's Budget	6.270	12.218	17.704
Total Adjustments	-0.269	-0.168	0.370
Summary of Adjustments			
Issue 68849 FY 2003 Update	-0.156		
Issue 66556 FY03 SBIR	-0.113		
Issue 68041 Section 8094: Management Improvements		-0.033	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ. Assumptions		-0.105	
Issue 66961 SPAWAR Service Cost Center Adjustments		-0.030	-0.050
Issue 69025 WCF - R&D SPAWAR - PBD 430			-0.019
Issue 69045 PBD 426 Rates - SSC			0.047
Issue 69389 NET ZERO Negative Fixes for RDTEN			-0.001
Issue 69492 PBD604 Inflation			-0.047
Issue 69512 PBD604 non purchase inflation			-0.01
Issue 69650 P07 Technical Adjustments			-0.008
Issue 19000 N61 HQ Support			-0.027
Issue 19014 Technical Issue: Fund VLF & MILSTAR CEP			0.525
Issue 67767 NWCF Rates - SPAWAR SSC Rates			-0.039
Issue 67760 NWCF Rates - NUWC Rates			-0.004
Miscellaneous Navy Adjustments			0.003
Subtotal	-0.269	-0.168	0.370

(U) Schedule:

CSRR program Milestone C has slipped from 2nd QTR FY04 to 4th QTR FY04. Navy and DoD TEMP approval signatures have delayed proceeding to CSRR Milestone C.

(U) Technical:

Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	1083 Shore to Ship Communications Systems

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3107 Submarine Broadcast Support	3.687	16.449	17.802	13.211	13.314	18.513	18.729	Continuing	Continuing

(U) E. ACQUISITION STRATEGY:

CSRR will integrate CNO N6 communication programs into the submarine radio rooms. The program has been designated as an ACAT III due to the radio room system level Operational Test requirement and the amount of funding required to execute the program. Each class variant (SSBN, SSGN, SSN) will require design integration and operational testing. The CSRR program is proceeding to a Milestone C decision in 4th Quarter FY04. The procurement of equipment will be accomplished by the established program offices; the integration of the equipment into the submarine environment will be conducted by the NAVSEA Undersea Warfare Center; and the installation will be accomplished by SPAWAR System Center, Charleston. VLF transmit terminal shall adapt a single channel airborne system to a multiple channel shore environment. The adaptation will maximize the use of Commercial Off The Shelf (COTS) and Non-Developmental Items (NDI) hardware and software. Procurement contract award will be based on full and open competition. EAM 2010 will develop an approach to use COTS and NDI components to extend operational life of the existing system and to establish a long term solution compatible with future Global Information Grid structures. The program plans MS-A in 2nd QTR FY06. Procurement contract award will be based on full and open competition. SUBOPAUTH is a phased Abbreviated Acquisition Program (AAP) using COTS and NDI.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **February 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	3.900	0.481	12/02	1.862	12/03	3.778	11/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	20.752	0.346	12/02	0.498	12/03	1.060	12/04	Continuing	Continuing	
Systems Engineering	WR	SSC San Diego, CA	33.458	0.435	N/A	0.285	N/A	3.027	N/A	Continuing	Continuing	
Systems Engineering	WR	Misc. Labs, NUWC, RI	8.051	0.225	11/02	0.900	11/03	0.824	11/04	Continuing	Continuing	
Systems Engineering	WR	US Army, Monmouth, NJ	4.210	0.000	N/A	0.250	11/03	0.247	11/04	Continuing	Continuing	
Systems Engineering	Various	Various	0.290								0.290	
Systems Engineering	CPFF	Rockwell, Richardson, TX	15.864	0.000	N/A	0.000	N/A	0.000	N/A		15.864	
Systems Engineering											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			86.525	1.487		3.795		8.936		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	WR	SSC San Diego, CA	3.000	1.767	11/02	1.603	11/03	2.734	11/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	Various	Various				2.600					2.600	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			3.000	1.767		4.203		2.734		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N Fleet Communications			PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Strategic OP Systems Perf Evaluatio	CPFF	APL/JHU, Baltimore, MD	4.100	2.100	12/02	2.400	12/03	3.950	12/04	Continuing	Continuing	
Systems Testing	Various	Various	2.445	0.682	11/02	1.064	11/03	1.117	11/04	Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			6.545	2.782		3.464		5.067		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ				0.492	11/03	0.452	11/04	Continuing	Continuing	
Government Engineering Support	WR	Various				0.135	11/03	0.325	11/04	Continuing	Continuing	
Program Management Support	Various	Various	3.829	0.234	11/02	0.129	11/03	0.190	11/04	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.829	0.234		0.756		0.967		Continuing	Continuing	
Remarks:												
Total Cost			99.899	6.270		12.218		17.704		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems - CSRR

Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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 C △										IOC ☆										FOC ☆
Test & Evaluation Milestones																																
Development Test - SSBN												D/T SSBN																				
Operational Assessment																OA																
OPEVAL SSBN																				OPEVAL SSBN												

* Not required for Budget Activities 1, 2, 3, and 6

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - CSRR	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone C			4Q					
Operational Assessment				4Q				
Development Test (D/T)			4Q	1Q - 3Q				
OPEVAL SSBN					4Q			
IOC					4Q			

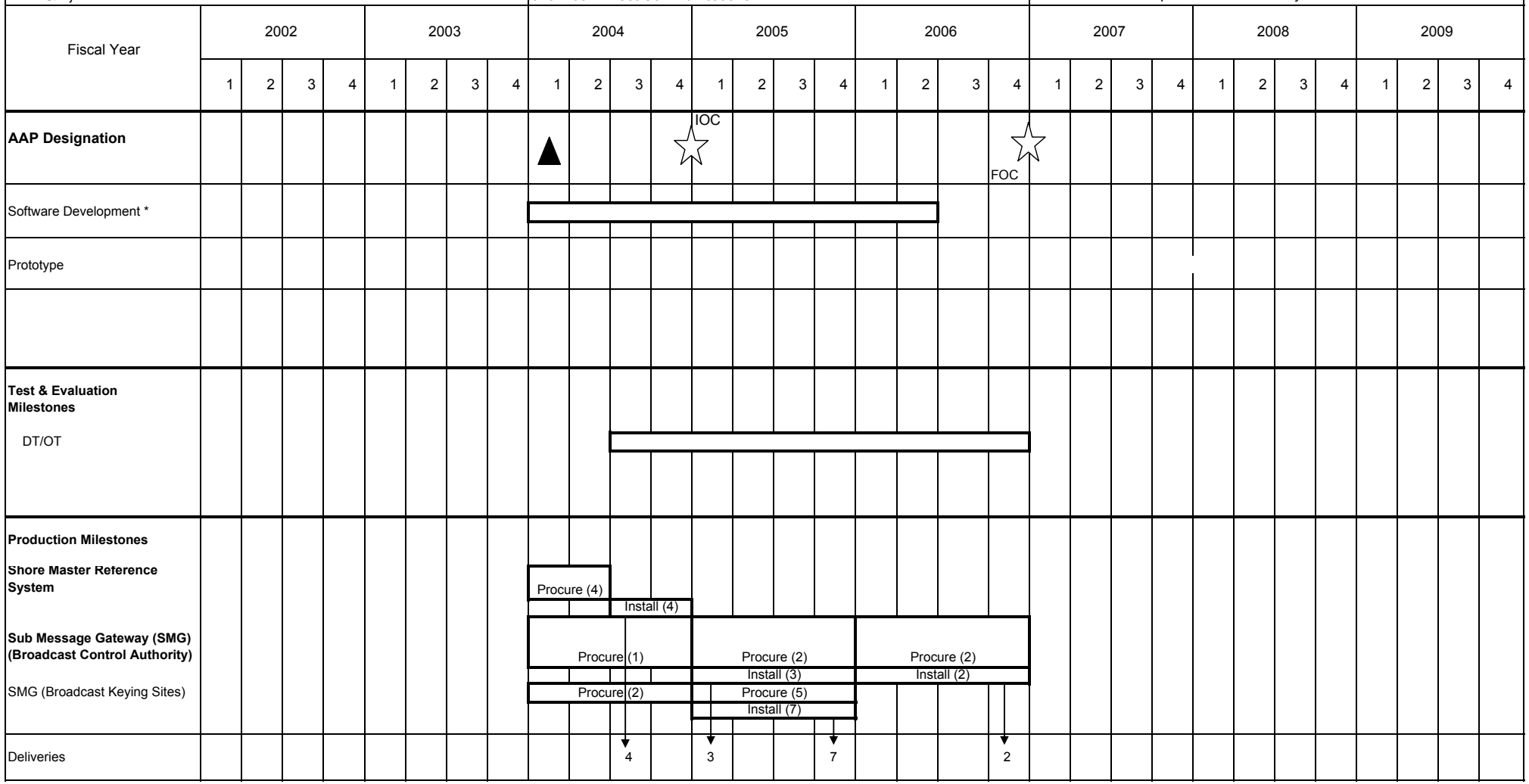
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems **SUBOPAUTH**



R-1 SHOPPING LIST - Item No. 168

* Development of tool sets for efficiency. Hardware procured in 310700

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - **SUBOPAUTH**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AAP Designation			1Q					
Software Development			1Q-4Q	1Q-4Q	1Q-2Q			
IOC			4Q					
SMRS Procure			1Q-2Q					
SMRS Install			3Q-4Q					
SMG Procure			1Q-4Q	1Q-4Q	1Q-4Q			
SMG Install				1Q-4Q	1Q-4Q			
Development Test/Operational Test			3Q-4Q	1Q-4Q	1Q-4Q			
FOC					4Q			

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems - **EAM 2010**

Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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-A △					MS-B △								MS-C △		
Prototype Phase																	Prototype Phase															
Test & Evaluation Milestones																																
Development Test																									DT							
Operational Test																												OT&E				
Production Milestones																																
FRP																															FRP (1) △	
Deliveries																																

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - EAM 2010	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A					2Q			
Prototype Phase					1Q - 4Q	1Q - 3Q		
Milestone B						3Q		
Development Test (DT&E)						4Q	1Q - 3Q	
Operational Test							4Q	1Q - 2Q
Milestone C								2Q
FRP								3Q - 4Q

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2004**

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

PROGRAM ELEMENT NUMBER AND NAME: 0204163N Fleet Communications

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications Systems - VLF Transmit Terminal

Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
AAP Designation															△													IOC ☆				
Collaborative Design Definition													▭	▭	▭	▭	▭	▭	▭	▭												
Integration/Modification																	▭	▭	▭	▭	▭	▭	▭	▭								
Test & Evaluation Milestones																																
Development Test																				DT&E												
Operational Test																									▭	▭						
Production Milestones																																
Procure																					Procure (6)				Procure (6)				Procure (12)			
Install																									Install (6)				Install (6)			
Deliveries																									6				6			

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N Fleet Communications				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications Systems			
Schedule Profile - **VLF Transmit Terminal**	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Collaborative Design Definition				1Q-4Q	1Q			
AAP Designation				3Q				
Integration/Modification					1Q-4Q			
Development Test					3Q-4Q			
Procure						1Q-4Q	1Q-4Q	1Q-4Q
Operational Test							1Q-2Q	1Q-4Q
IOC							2Q	
Install							1Q-4Q	1Q-4Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **October 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 0795 Support of MEECN				
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost	**6.0**	**1.0**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**7.760**
RDT&E Articles Qty											**0**

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

MEECN is a non-acquisition program which develops methods of strategic communications from the Commander in Chief to the Strategic Forces in compliance with the Joint Staff Nuclear Technical Performance Criteria (NTPC). The MEECN requirements cover delivery of Emergency Action Messages (EAMs) from the Commander-in-Chief to Nuclear weapons execution platforms (SSBN, B-52 bombers and fixed site Launch Control Centers) over survivable communication paths. The MEECN accomplishes this by designing, developing, testing new MEECN communication mode designs. The modes are designed to provide assured delivery in hostile RF environments within the required delivery time to execute nuclear orders. The MEECN develops the communications modes based on current state of the art in communications and coding theory and adaptive signal processing. The products delivered by the MEECN consist of a Mode Standard. This Standard includes the following: System Requirements, Software Requirements, Software Design, executable software code, Test Description and Test procedures. This Mode Standard package is provided to individual STRATCOM system implementers (both Navy and Air Force) for implementation in various Strategic Communications transmitters and receivers. After delivery of the Mode Standard to implementers, the MEECN provides engineering expertise to facilitate implementation and testing on operational equipments.

There is a current STRATCOM requirement to develop a follow-on mode to the current operational mode set known as HIDAR-plus. The HIDAR-plus will replace a set of modes with a single mode that increases robustness to better meet delivery requirements and to greatly reduce the overall delivery time of the mode sequence currently in operation. Another key factor is to provide a mode with a single baud rate that meets requirements as defined in the Joint Staff Nuclear Technical Performance Criteria. One of the transmit platforms is an E-6B aircraft. The aircraft must conduct a tight orbit with several miles of antenna hanging down while transmitting multiple baud rates. This creates strain on the power amplifier system and extreme wear and tear on the aircraft. The HIDAR-plus mode will be designed to greatly reduce the overall time that is required for the aircraft to fly in tight orbit formation to transmit messages. The introduction of HIDAR-plus will lead to greatly reduced wear and tear and will extend the life of the power amplifier system and the E-6B airframe.

The MEECN budget beginning in FY05-FY09 has been zeroed. The FY04 funding will be utilized to preserve all previous mode development research into a single design document to capture all the Strategic Communications research conducted under the MEECN. This document will provide the Joint Staff with a preliminary design detailing the obtainable performance characteristics of HIDAR-plus necessary for planning future long term EAM distribution requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N FLEET COMMUNICATION	0795 Support of MEECN

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05	
Accomplishments/Effort/Subtotal Cost	0.999	0.787	0.000	
RDT&E Articles Quantity				

FY03 Accomplishments: Updated MEECN Mode design for ease in moderate processor implementations. Continued non-AUTODIN based Emergency Action Messages (EAMs) delivery system (NOVA Hybrid Solution) and completed NOVA Hybrid Solution certification testing to support the FY03 AUTODIN closure. Evaluated transverse electric/magnetic antenna pattern combining methods for improved MEECN mode.
FY04: Consolidate all previous mode development research into a single design document to capture all the Strategic Communications research conducted under the MEECN and to provide the Joint Staff with a preliminary design detailing the obtainable performance characteristics of HIDAR-plus.

Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N FLEET COMMUNICATION	0795 Support of MEECN

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:	1.031	0.827	0.727
FY05 President's Budget	0.999	0.787	0.000
Total Adjustments	-0.032	-0.040	-0.727
Summary of Adjustments			
Issue 68849 FY 2003 Update	-0.016		
Issue 66556 FY03 SBIR 5 May 03	-0.016		
Issue 68060 FFRDC Reduction		-0.031	
Issue 68041 Section 8094: Mgmt. Improvements		-0.002	
Issue 68066 Sec 8126: Efficiencies/Revised Econ. Assump		-0.007	
Issue 19000 N61 HQ Support			-0.042
Issue 66777 Sea Enterprise (LOE II)			-0.685
Subtotal	-0.032	-0.040	-0.727

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME 0795 Support of MEECN	

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable										

(U) E. ACQUISITION STRATEGY:

Not Applicable

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0204163N FLEET COMMUNICATION			PROJECT NUMBER AND NAME 0795 Support of MEECN							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support											0.000	
Software Development	WR	SSC San Diego, CA	2.178	0.345	11/02	0.563	11/03				3.086	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.178	0.345		0.563		0.000		0.000	3.086	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2004**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0204163N FLEET COMMUNICATION			PROJECT NUMBER AND NAME 0795 Support of MEECN						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.270								0.270	
Operational Test & Evaluation	Various		0.221								0.221	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.491	0.000		0.000		0.000		0.000	0.491	
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ	2.490	0.584	11/02	0.084	11/03				3.158	
Government Engineering Support		SSC San Diego, CA	0.498	0.058	11/02	0.125	11/03				0.681	
Program Management Support		SSC San Diego, CA	0.317	0.012	11/02	0.015	11/03				0.344	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.305	0.654		0.224		0.000		0.000	4.183	
Remarks:												
Total Cost			5.974	0.999		0.787		0.000		0.000	7.760	
Remarks:												

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0204163N Fleet Communications												PROJECT NUMBER AND NAME 0795 Support of MEECN											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
MEECN - NON-Acquisition Program																																
HIDAR-Plus Requirements and Design Description Documents																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 168

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT& BA-7**	PROGRAM ELEMENT 0204163N FLEET COMMUNICATION				PROJECT NUMBER AND NAME 0795 Support of MEECN			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
HIDAR-Plus Requirements and Design Description Documents			1Q-4Q					

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION					PROJECT NUMBER AND NAME 9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)					
COST ($ in Millions)	Prior Years Cost	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009		Cost to Complete	Total Program
Project Cost			**6.9**								**6.9**
RDT&E Articles Qty											**0**

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

The Joint Integrated System Technology for Advanced Networking Systems (JIST-NET) project is an ongoing effort to integrate, develop, and support Military SATCOM multi-spectrum communications planning, management, and control capabilities that interface with many mono-spectral planning and management tools and with advanced planning tools. This project has extremely high visibility within the DoD and United States Congress. The project was moved to PEO C4I & Space, PMW 176 from the United States Air Force starting in FY04 to better meet the requirements, deadlines, and funding priorities established for the project.

Congressional add to define requirements and interface/integrate existing and newly developed SATCOM mission management capabilities into the JIST-NET project.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-7	0204163N Shore to Ship Communications Systems	9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) B. Accomplishments/Planned Program

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		6.923	
RDT&E Articles Quantity			

FY04: Congressional add to define requirements and interface/integrate existing and newly developed SATCOM mission management capabilities into the JIST-NET project. The contractor will update the JIST-NET Software Design for the next JIST-NET prototype using the results of the Software Requirements Analyses.

	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			
RDT&E Articles Quantity			

R-1 SHOPPING LIST - Item No. 168

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0204163N Shore to Ship Communications Systems	9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
FY04 President's Budget:		0.000	
FY05 President's Budget:		6.923	
Total Adjustments	0.000	6.923	0.000

Summary of Adjustments

Issue 68559 Joint Integrated Systems Technology		7.000	
Issue 68041 Sec. 8094: Management Improvements		-0.018	
Issue 68066 Sec. 8126: Efficiencies/Revised Econ. Assumptions		-0.059	
Subtotal	0.000	6.923	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATION	PROJECT NUMBER AND NAME 9421 Joint Integrated Systems Technology for Advanced Network Systems (JIST-NET)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not Applicable										

(U) E. ACQUISITION STRATEGY:

Not Applicable