EXHIBIT R-2, RDT&E Budget Item Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7				R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT				
COST ($ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	**23.137**	**26.527**	**37.431**					
0725 Communications Automation	9.603	11.467	15.514					
1083 Shore to Ship Communications	12.563	15.060	21.917					
9999 AN-USQ-155 Card Upgrade	0.971							

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, Automated Digital Network System (ADNS), Tactical Switching Ashore, High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR). In Fiscal Year (FY) 10, begin Common Radio Room (CRR) communications for requirements analysis, system design and the Mobile Networking High Band (MNH) Increments 1 and 2.

ADNS is the method by which tactical Navy units (surface, subsurface, and air assets) transfer Internet Protocol (IP) data to Navy and Department of Defense (DoD) communities on the Global Information Grid (GIG). ADNS serves as a gateway to enable joint and coalition interoperability for these tactical assets and ensures GIG connectivity. ADNS allows Unclassified, Secret, Top Secret traffic, and various joint, allied, and coalition services to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) paths and pier connectivity.

ADNS provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting Naval, Coalition and Joint enclaves worldwide. ADNS utilizes Commercial Off the Shelf/ Government Off the Shelf (COTS/GOTS) equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) I provides initial limited, Ship to Shore IP connectivity, separation of enclaves, reuse of unused enclave bandwidth, and Ship to Shore Tactical IP connectivity. ADNS INC II provides additional capabilities of load balancing, RF restoral, Initial Quality of Service (QoS) to include application prioritization, initial traffic management, and enhancements designed to maximize use of available bandwidth for surface, shore, and airborne platforms. ADNS INC III converges all Navy tactical voice, video, and data requirements into a converged IP data stream. In addition, the INC III architecture incorporates an IPv4/IPv6 dual stack and a cipher text security architecture to align to the GIG in order to mesh Navy tactical surface, subsurface, and airborne platforms into a single IP environment with Gateway functions to Joint and Coalition Networks. ADNS INC III serves as the Navy tactical interface (Gateway) for IP Networking with Joint Tactical Radio System (JTRS), High Assurance Internet Protocol Encryptor (HAIPE), Advanced Extremely High Frequency (AEHF). Future ADNS capabilities will utilize the emerging transformational technologies to integrate additional DoD Command, Control, Communications, Computers, & Intelligence (C4I) Programs, to improve inter-strike group networking and extend the network to the tactical edge.

Tactical Messaging: Tactical Messaging developed joint/combined individual and organizational message handling for United States Navy (USN) ships and submarines, Tactical Mobile (TacMobile) units, United States Marine Corp (USMC) vans, and selected Military Sealift Command (MSC) and United States Coast Guard (USCG) platforms. Tactical Messaging develops fleet interfaces to the Defense Messaging System (DMS) and legacy ashore messaging systems. DMS Proxy Afloat will develop the interface with Integrated Shipboard Networks System (ISNS) to allow removal of DMS Components from all ships.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT

The Tactical Switching Ashore (TSw) program rebuilds 1970s based shore high frequency based infrastructure to current and future scalable technical standards in order to provide a commercially standardized, technically compliant, and robust network. TSw is the shore component for Consolidated Afloat Networks and Enterprise Services (CANES). TSw will migrate the shore sites and their terrestrial interconnections into a coherent, scalable, network-centric capability. While leveraging off recent shore upgrades for the major shore communication regions, TSw will incorporate a system integrator approach to develop, design, and implement a plan to remove bandwidth limitations, create failover communication paths, provide secure and available communications, provide dynamic bandwidth management, and reduce costly dependencies on legacy systems. This plan is designed to increase efficiencies, and reduce manpower and the overall footprint of the Navy's shore sites. In addition, TSw will provide an enterprise-wide network operations capability providing full network Situational Awareness (SA)/network visualization, network Management and Control (M/C) and automation capabilities. TSw will bring new technologies and capabilities that converge legacy, circuit-based, communications to a standard, integrated, and interoperable IP network. This enabling system, of which United States Navy enterprise network (FORCEnet) is a part, supports the four pillars of Sea Power 21 by providing the infrastructure required to support collaborative decision-making, faster decision cycles, and shared superior situational awareness required for Overseas Contingency Operations and mitigate network vulnerabilities. FY10 will continue the development for the implementation of ALL-IP interoperability allowing for the removal of the remaining legacy and Navy network architectures. TSw will develop the end to end QoS providing global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scaleable, sustainable, and dynamic failover global network architecture. TSw will develop the integration plan to maximize the DISN Core for transport, research, develop and test, and route diversification, and distributed joint services to allow access anywhere via distributed services.

The High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR) program replaces legacy Battle force Email (BFEM) 66 and enables delivery of IP based collaboration services over legacy High Frequency (HF) assets. The intent is to provide an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. Supports Tactical Edge Networking and provides data path backbone for both airborne and afloat forces. Supports increased data exchange with Allied Coalition forces.

Mobile Networking High Band (MNH) Increment 1 (WiFi/SeaLancet) is a component of the Naval Tactical Network collaborative effort to provide an overarching solution to fleet communications and networking requirements. This effort provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. It is an 802.11-based networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio provides a common wireless networking capability aboard LCS with applicability to other hull types, as well as other networked applications.

MNH Increment 2 system is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic. It will achieve substantial spectral efficiency (frequency reuse) via narrow-beam antennas and a Time Demand Multiple Access (TDMA) based waveform. Also provides ad hoc (dynamic) communication nets using a discovery process. Provides theater-wide connectivity to units outside denied Satellite Communication (SATCOM) areas. Features next generation, fast switching, directional antenna technology to support multiple node connections. Uses IP based connectivity to achieve GIG (Global Information Grid) interoperability.

The Shore to Ship Communications System develops communication system elements which provide positive command and control of deployed Ship Submersible Ballistic Nuclear Submarines (SSBNs), Ship Submersible Guided Nuclear Submarines (SSGNs), and Ship Submersible Nuclear Submarines (SSNs). The Shore to Ship Communications System which provides continuous assessment of the command and control links between the National Command Authority (NCA) and missile platforms is conducted to ensure compliance with Nuclear Technical Performance Criteria (NTPC). The Shore to Ship Communications System addresses joint system design issues for Emergency Action Message (EAM) distribution to all nuclear platforms and provides evaluation of joint interoperability of EAM delivery systems. Tools are developed to provide strategic command and control planning, within the submarine shore infrastructure, to support deployed SSBNs.

The Low Band Universal Communications System (LBUCS) will ensure operational capability through the VLF architecture to ensure system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput and Anti-Jam capability, ensuring more operational products are delivered to a submarine without risking mast exposure. The flexibility further includes simplified shore architecture to maintain capability while utilizing fewer shore nodes (Broadcast Keying Sites). LBUCS also provides a replacement of the VLF receive system to ensure continued compliance with NTPC

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0204163N FLEET TACTICAL DEVELOPMENT

Submarine communications allied interoperability issues are being investigated. Coalition architectures are developed and tested to address continued interoperability, as new technology is applied. Interoperability between coalition Submarine Operating Authorities (SUBOPAUTH) and submarines under US operational control are evaluated to determine the most effective approaches for interoperability in an environment dealing with changing North Atlantic Treaty Organization (NATO) standards for submarine communication. These standards migrate from serial to Internet Protocol (IP) based systems. A Project Arrangement has been signed by both US and UK to develop a Network Enabled Operation Capability.

The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS) is an acquisition program to replace the NC3 Hybrid Solution (HS) with a new NC3 architecture, the Defense Information Systems Network (DISN) Dedicated IP Network (DIN) (NC3 LTS) system. The primary function and mission of NC3 LTS is to provide accurate and reliable delivery of time-critical messages for the nuclear forces. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages (EAMs), Nuclear Command and Control (NC2) messages including Nuclear Planning and Execution System (NPES) messages for force management, force direction, execution, and situation monitoring.

Congressional add to develop a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections.

FY10 funds will be used for increased development for Advanced Digital Networks System (ADNS), commence development for Common Radio Room (CRR), commence development for Mobile Networking High Band (MNH) increment number 1 and number 2, increased development for LBUCS and increase development for NC3 LTS.

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**R-1 ITEM NOMENCLATURE** 0204163N FLEET TACTICAL DEVELOPMENT	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
FY09 President's Budget:	23.582	26.696	24.832
FY10 President's Budget Submit:	23.137	26.527	37.431
Total Adjustments:	-0.445	-0.169	12.599
Summary of Adjustments :			
Program Adjustments:			12.737
Rate/Misc Adjustments:	-0.445	-0.169	-0.138
Subtotal:	-0.445	-0.169	12.599

Schedule:

ADNS: Increment (INC) III System Development has slipped to incorporate INC III development modifications to the rack design, which pushed Developmental Testing (DT), Operational Testing (OT), Full Rate Production Decision Review (FRPDR), Initial Operational Capability (IOC), and Full operational Capability (FOC) to the right for INC III. Milestone C slipped from 2nd Quarter, Fiscal Year (FY) 2008, to 4th quarter, FY 2008. INC III Submarine efforts were added to reflect current requirements. Operational Testing (OT) planned for 2 Qtr FY10. Full Rate Production Decision Review (FRPDR) currently planned for 4th Qtr FY10.

LBUCS: Milestone B completed 1st Qtr FY09.

NC3-LTS: Milestone B is currently planned for 4th Qtr FY10.

Technical:

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0204163N FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION				
COST ($ in Millions)	**FY 2008**	**FY 2009**	**FY 2010**					
Project Cost	9.603	11.467	15.514					
RDT&E Articles Qty			**5**					

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 provides processing, storage, distribution and forwarding of General Service organizational messages on ships and submarines.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting Naval, Coalition and Joint enclaves worldwide. ADNS utilizes Commercial Off the Shelf/ Government Off the Shelf (COTS/GOTS) equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment I provides initial limited, Ship to Shore IP connectivity, separation of enclaves, reuse of unused enclave bandwidth, and Ship to tactical Shore IP connectivity. ADNS Increment II provides additional capabilities of Load Balancing, Radio Frequency (RF) restoral, Initial Quality of Service (QoS) to include application prioritization, Initial Traffic Management, and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS Increment III converges all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. Increment III interoperates with higher bandwidth satellites, supporting up to 25 Mega Bytes per Second (Mbps) of throughput on Unit Level ships and up to 50 Mbps on Force Level ships. Increment III architecture also incorporates an IPv4/IPv6 dual stack and a cipher text security architecture to align to joint and coalition networks, in addition to greater security utilizing the High Assurance Internet Protocol Encryptor (HAIPE) devices. ADNS INC III serves as the Navy Tactical Interface (Gateway) for IP Networking with Joint Tactical Radio System (JTRS), and Advanced Extremely High Frequency (AEHF). Future ADNS capabilities will utilize emerging transformational technologies to integrate with additional DoD C4I Programs, to improve inter-strike group networking and extend the network to the tactical edge.

Tactical Switching Ashore will support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, network capability.

The High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR) program replaces legacy Battle force Email (BFEM) 66 and enables delivery of IP based collaboration services over legacy High Frequency (HF) assets. The intent is to provide an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. Supports Tactical Edge Networking and provides data path backbone for both airborne and afloat forces. Supports increased data exchange with coalition forces.

The Mobile Networking High Band (MNH) Inc 1 (WiFi/SeaLancet) is a component of the Naval Tactical Network collaborative effort to provide an overarching solution to fleet communications and networking requirements. This effort provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. It is an 802.11-based networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio provides a common wireless networking capability aboard LCS with applicability to other hull types, as well as other networked applications.

The Mobile Networking High Band (MNH) Inc 2 system is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic. It will achieve substantial spectral efficiency (frequency reuse) via narrow-beam antennas and a Time Demand Multiple Access (TDMA) based waveform. Also provides ad hoc (dynamic) communication networks using a discovery process. Provides theater-wide connectivity to units outside denied Satellite Communication (SATCOM) areas. Features next generation, fast switching, directional antenna technology to support multiple node connections. Uses IP based connectivity to achieve GIG interoperability.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION

(U) B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10
Automated Digital Network System (ADNS)			
Accomplishments/Effort/Subtotal Cost	5.093	5.686	8.227
RDT&E Articles Quantity			5

FY08 Accomplishments: Completed the system development and demonstration phase of ADNS Increment (INC) III with required interfaces. Developed acquisition documents, specifications, and capability requirements for INC III and future increments, as necessary to deliver technology, networks, and throughput capabilities defined in the ADNS Capability Development Document (CDD) for all Navy Tactical Units (Surface, Submarine, Airborne, Shore, and TACMOBILE).
FY09: Develop system modification of INC III for High Assurance Internet Protocol Encryptor (HAIPE) integration and submarine platforms. Develop acquisition documents, specifications, and capability requirements for INC III Subs. Develop and update system and subsystem interface designs for integration with new Satellite Communications (SATCOM) and Radio Frequency (RF) paths, as they emerge. Begin research and evaluation of emergent technology maturity for inclusion into future capabilities developed for ADNS systems.
FY10: Conduct INC III Developmental Testing (DT), conduct Operational Testing (OT) of INC III and Joint Interoperability Test Command (JITC) Certification of INC III. Continue the development of dynamic Quality of Service (QoS)/Ethernet modems. Continue the development of the system modification of INC III for HAIPE integration. Continue the development of acquisition documents, specifications, and capability requirements for INC III Subs. Continue the system development and demonstration phase for INC III for submarines. Perform acceptance test for INC III Subs, and begin the Common Submarine Radio Room (CSRR) integration effort. Continue the development of and update to system and subsystem interface designs for integration with new SATCOM and Radio Frequency (RF) paths, as they emerge. Continue the research and evaluation of emergent technology maturity for inclusion into future capabilities developed for ADNS systems.

	FY 08	FY 09	FY 10
Tactical Messaging (NAVMACS)			
Accomplishments/Effort/Subtotal Cost	0.554	1.230	0.000
RDT&E Articles Quantity			

FY08 Accomplishments: Performed planning and developmental testing for Interoperability Demonstration of the Defense Messaging System (DMS) Proxy solution to be implemented as part of the multiprogam Assured Internet Protocol (AIP) initiative.
FY09: Continue development and test efforts for emerging technology to transition Tactical Messaging into a Service Oriented Architecture to align with DoD Organizational Messaging (OM) of the future, and enable mobile tactical users to better support reporting for Maritime Domain Awareness.
FY10: No developmental requirements.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS	**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION

B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10
Tactical Switching (Ashore)			
Accomplishments/Effort/Subtotal Cost	3.956	3.976	2.352
RDT&E Articles Quantity			

FY08 Accomplishments: Continued the Increment II Spiral B development that began in FY07. The program expanded the monitoring (Situational Awareness) , Management and Control capability developed in FY06/FY07 further defining the automation and remote capabilities of the Enterprise Network Management System (ENMS). In addition, TSw developed and designed a plan to eliminate bandwidth limitations within the architecture by designing failover communication paths either physical or virtual, providing real time integrated security, enabling dynamic bandwidth management, and reducing costly dependencies on legacy systems. This new capability requires less manual intervention and serves as the backbone technology to reduce the Navy communication facilities infrastructure while providing the 2 Regional Network Operations and Security Centers (RNOSC) with real-time network status/health. Efforts outlined in Increment II Spiral A and B provided the foundation for reducing the manpower and facilities which enabled substantial FYDP savings.
FY09: Complete Increment II Spiral B development that continued in FY08. Complete the design, development, testing and implementation of the upgrades to the Tactical Switching and NOC systems to allow for full integration with the Joint Community on the All Internet Protocol (IP) Global Information Grid (GIG). Develop the design and implementation plan to eliminate the remaining legacy and Navy unique networking elements that remain in the Tactical Switching architecture. This will allow for full All IP interoperability and integration between Navy forces and the forces of other branches of the service in the Joint battlespace to allow for full Network Centric Warfare. Provide for full direct access for Navy war fighters through the Navy RNOSCs to the All IP GIG for full warfighting application data exchange. Provide the mechanism for dynamically and automatically managed real time integrated Information Assurance and security . Provide for Quality of Service (QoS) enabled traffic flow prioritization and fully automated dynamic bandwidth management. This new capability will require only a minimal amount of manual intervention and will provide for full integration between the Navy and Joint operational enclaves over UNCLAS, Secret, Sensitive Compartmented Information (SCI) and multiple Combined Enterprise Regional Information Exchange System (CENTRIXS) network enclaves. The integration of Navy and Joint operational enclaves over multiple security domains provides key foundational connectivity required to support the Navy's Maritime Domain Awareness efforts.
FY10: FY10 will continue the development for the implementation of ALL-IP interoperability allowing for the removal of the remaining legacy and Navy unique network architectures. Additionally, TSw will develop the end to end QoS providing global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scaleable, sustainable, and dynamic failover for a global network architecture.

	FY 08	FY 09	FY 10
HFIP/SNR			
Accomplishments/Effort/Subtotal Cost	0.000	0.575	0.000
RDT&E Articles Quantity			

FY08 Accomplishments: No developmental requirements.
FY09: Conduct market survey and testing for modems with increased data rates supporting High Frequency (HF) and Ultra High Frequency (UHF) Systems. Investigate new technologies in support of High Frequency Internet Protocol/Sub Network Relay (HFIP/SNR). Efforts may involve studies or development / testing of potential technologies for future program insertion.
FY10: No developmental requirements.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER AND NAME**	**PROJECT NUMBER AND NAME**
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS	0725 COMMUNICATIONS AUTOMATION

B. Accomplishments/Planned Program

	FY 08	FY 09	FY 10
Mobile Networking High Band (MNH) Inc 1 (WiFi/SeaLancet)			
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.974
RDT&E Articles Quantity			

FY08 Accomplishments: No developmental requirements.
FY09: No developmental requirements.
FY10: Obtain Milestone B Decision. Prepare new start acquisition documentation and Analysis of Alternatives (AoA). Award prime prototype/Engineering Development Module (EDM) contract and begin system development.

	FY 08	FY 09	FY 10
Mobile Networking High Band (MNH) Inc 2			
Accomplishments/Effort/Subtotal Cost	0.000	0.000	2.961
RDT&E Articles Quantity			

FY08 Accomplishments: No developmental requirements.
FY09: No developmental requirements.
FY10: Obtain Milestone B Decision. Prepare new start acquisition documentation and Analysis of Alternatives (AoA). Award prime prototype/Engineering Development Module (EDM) contract and begin system development.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER AND NAME**	**PROJECT NUMBER AND NAME**
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS	0725 COMMUNICATIONS AUTOMATION

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
3050 – Ship Comm Auto – Tactical Messaging	2.626	2.672	3.890
3050 – Ship Comm Auto – ADNS	46.308	51.947	37.405
3050 – Ship Comm Auto – Tactical Switching (Ashore)	35.325	41.872	27.269
3057 – Comm Items Under $5M – HFIP/SNR	6.503	14.043	13.356
TOTAL	90.762	110.534	81.920

D. ACQUISITION STRATEGY:

Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined Increment I, II, and III baselines. Increment I , II , and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS aggressively leverages Commercial Off The Shelf (COTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decreased contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

Tactical Messaging): Tactical Messaging provides tactical war fighters with Command, Control, and Communication (C3) functionalities and functions in an open architecture environment. The program uses state-of-the-art technology that reduces operator training, technical support, maintenance, and overall life cycle system costs. The system uses COTS hardware and software and Government Off the Shelf (GOTS) furnished software.

Tactical Switching Ashore: Evolutionary acquisition approach with overlapping development and implementation increments. Use existing contract vehicles during Increment I implementation of procurement upgrades to existing shore legacy equipment at the major communication centers (Naval Computer & Telecommunications Area Master Station (NCTAMS) Pacific (PAC), NCTAMS Atlantic (LANT), NCTAMS Europe Central (EURCENT), Naval Computer & Telecommunications Station (NCTS) Bahrain, and NCTS San Diego) and to include 40+ shore communication facilities (Communication Stations (COMSTATIONs), Naval Operations Centers (NOCs), Mini-NOCs, and Standard Tactical Data Entry Point (STEP) sites). Increment I upgrades serve as an enabler to Increment II activities. Based upon the future shore communication architecture as defined by the Navy, Increment II transitions the Navy's 3 NCTAMS and two major Network Control Terminal (NCT) Shore infrastructure to a 2 regional network operations and security center (RNOSC) and 1 global network operations and security center (GNOSC) concept to achieve a Joint/Department of Defense (DoD) Net-Centric environment. Increment II will be organized into two steps. Each step will build upon the previous step and serve as risk mitigation for the succeeding step. This strategy provides flexibility in a rapidly evolving technology environment and allows earlier implementation of developmental technology as it becomes available. The Increment III strategy is to maximize the use of joint resources. Tactical Switching will maximize the Defense Information Systems Network (DISN) Core for unified Navy transport, allowing for route diversification and distributed joint services allowing access anywhere via distributed services.

Mobile Networking High Band (MNH) Inc 1/2: MNH INC 1 and 2 contracts are anticipated to be awarded as SPAWAR Headquarters contracts with LRIP options built in.

E. MAJOR PERFORMERS

MNH Inc 1 - RSS and Harris Corporation (Melbourne, FL) are currently supporting the NAVSEA SBIR effort.
MNH Inc 2 - TBD
HFIP/SNR - COMOPTEVFOR

F. METRICS

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

EXHIBIT R-3 Cost Analysis							DATE: May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			PROGRAM ELEMENT 0204163N FLEET COMMUNICATIONS				PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC	1.025							
Primary Hardware Development	CPFF	Northrop Grumman	6.196	1.992	Dec-08					
Primary Hardware Development	CPFF	General Dynamics	6.801	4.866	Apr-09	7.896	Apr-10			
Primary Hardware Development	CPFF	SRA	0.000	0.010	Dec-09	0.016	Dec-09			
Primary Hardware Development	TBD	TBD	0.000			2.661	Jun-10			
Primary Hardware/Software	CPFF	Air Force	2.078							
Primary Hardware/Software	TBD	RSS/Harris (Melobo	0.000			1.674	Mar-10			
Integration and Test	WX	SSC	0.000	0.365	Feb-09	0.592	Feb-10			
Integration and Test	CPFF	VAR	0.000	0.030	Dec-08	0.049	Dec-09			
Systems Engineering	WX	SSC	18.185	0.800	Dec-09	0.652	Dec-09			
Systems Engineering	VAR	VAR	6.096							
Systems Engineering	WX	NUWC	0.633	0.128	Dec-08	0.208	Dec-09			
Prime Mission Product	PO	SSC	4.353							
Subtotal Product Development			45.367	8.191		13.748				
Remarks:										
Development Support	WX	SSC	0.160							
Software Development	VAR	VAR	5.501							
Integrated Logistics Support	VAR	VAR	1.150							
Documentation	VAR	VAR	0.706							
Technical Data	VAR	VAR	0.500							
Studies and Analysis	WX	SSC	0.960							
Subtotal Support			8.977	0.000		0.000				
Remarks:										

Exhibit R-3 Cost Analysis							**DATE:** May 2009			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			**PROGRAM ELEMENT** 0204163N FLEET COMMUNICATIONS				**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC	2.772	1.554	Dec-08	0.400	Dec-09			
Developmental Test & Evaluation	MP	CECOM (MITRE)	0.000	0.295	Nov-08					
Developmental Test & Evaluation	MP	JITC	0.084	0.061	Oct-08	0.099	Oct-09			
Operational Test & Evaluation	WX	COMOPTEVFOR	0.550	0.226	Nov-08	0.367	Nov-09			
Operational Test & Evaluation	VAR	VAR	4.955							
Subtotal T&E			8.361	2.136		0.866				
Remarks:										
Contractor Engineering Support	VAR	VAR	0.481	0.065						
Contractor Engineering Support	CPFF	SSC SD	0.000			0.400	Dec-09			
Government Engineering Support	WX	SSC	0.380	0.437	TBD					
Program Management Support	WX	SSC	2.485							
Program Management Support	CPAF	VAR	7.268	0.500	Nov-08	0.300	Nov-09			
Program Management Support	CPFF	TBD	0.000	0.138	Mar-09	0.200	Dec-09			
Subtotal Management			10.614	1.140		0.900				
Remarks:										
Total Cost			73.319	11.467		15.514		Continuing	Continuing	

EXHIBIT R4, Schedule Profile			
			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION - ADNS

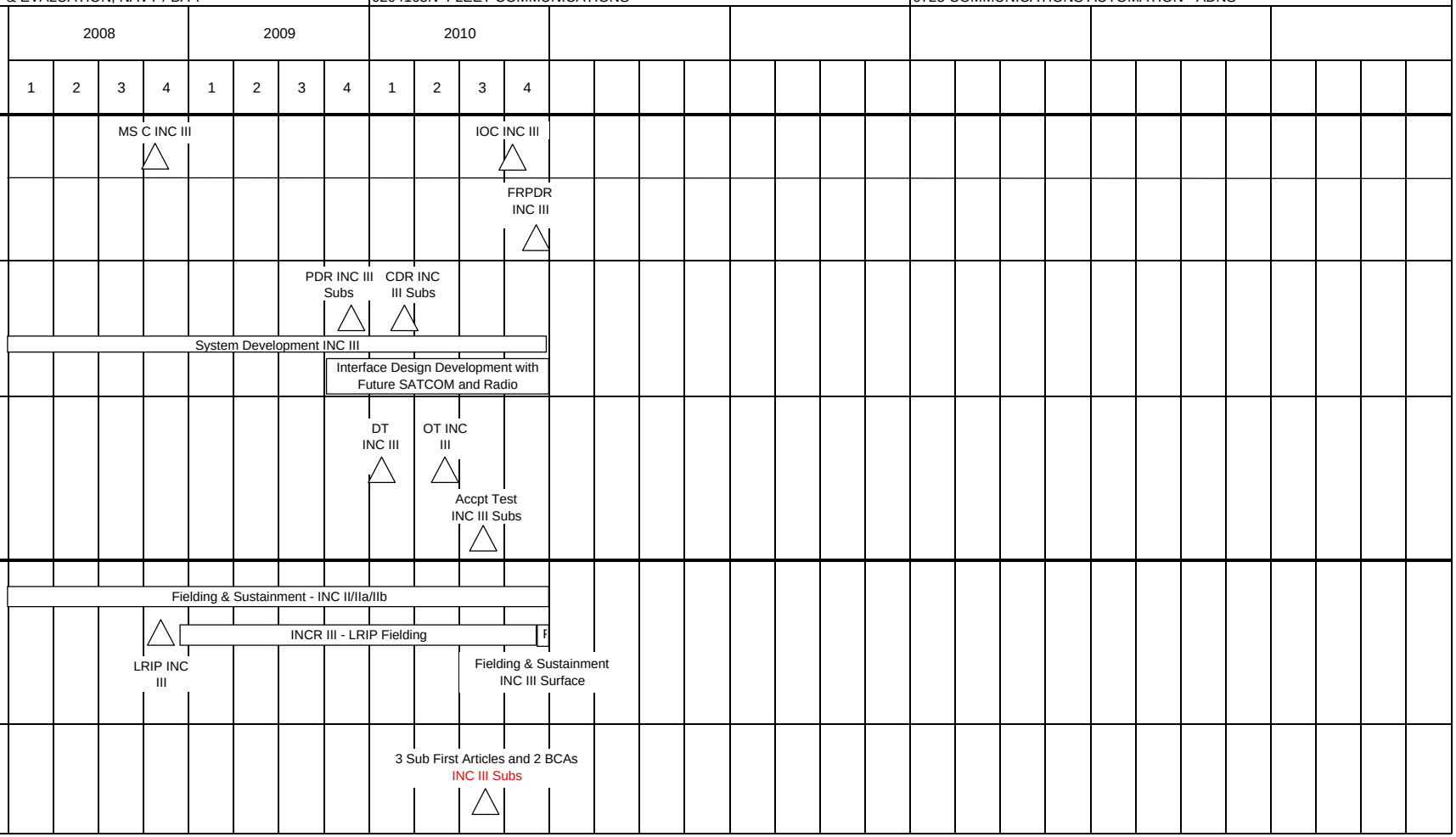


Exhibit R-4a, Schedule Detail				**DATE:** May 2009				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS			**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION - ADNS				
Schedule Profile	**FY 2008**	**FY 2009**	**FY 2010**					
INCREMENT I *								
INCREMENT II								
*Initial Traffic Management, Shore **(TMS)***								
Full Operational Capability (FOC)								
INCREMENT IIa								
*Voice Over IP **(VOIP)***								
Fielding and Sustainment (Inc II/IIa/IIb)	1Q-4Q	1Q-4Q	1Q-4Q					
INCREMENT III								
Core Capability - Converged IP, Meshed, IPv6, Black Core, 25/50 Mbps								
System Development	1Q-4Q	1Q-4Q	1Q-4Q					
Milestone C (MS C)	4Q							
Low Rate Initial Production (LRIP)	4Q							
Low Rate Initial Production (LRIP) Fielding	4Q	1Q-4Q	1Q-4Q					
Developmental Testing (DT)			1Q					
Operational Testing (OT)			2Q					
Full Rate Production Decision Review (FRPDR)			4Q					
Initial Operational Capability (IOC)			4Q					
Interface Design Development with SATCOM and Radio Frequency (RF) paths		4Q	1Q-4Q					
Fielding and Sustainment Inc III Surface			4Q					
Subs								
Preliminary Design Review (PDR)		4Q						
Critical Design Review (CDR)			1Q					
Acceptance Test			3Q					
Deliver 3 Sub First Articles and 2 BCAs			3Q					
	-							
	-							
	-							

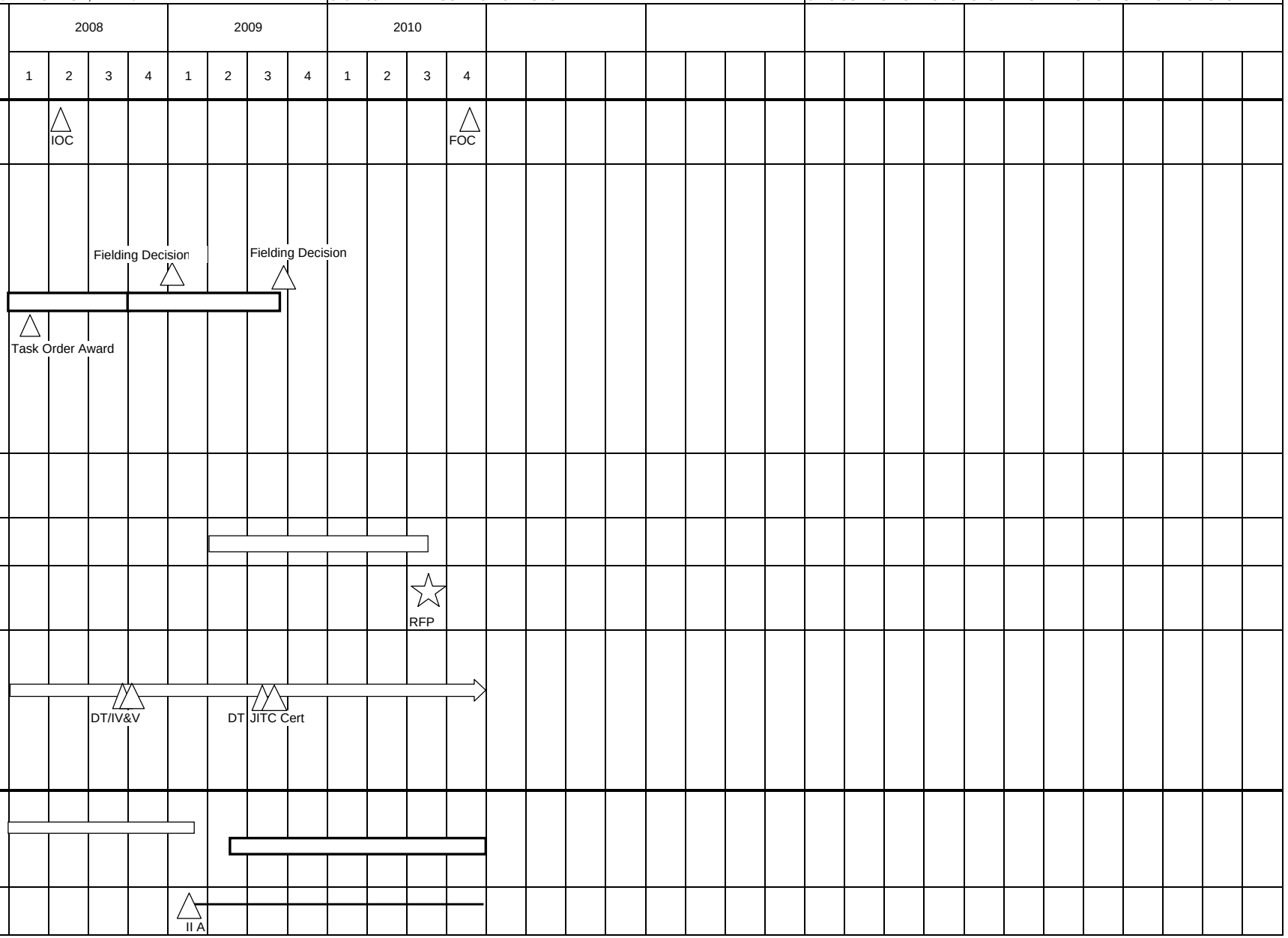
EXHIBIT R4, Schedule Profile																															DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7									PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS														PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION - TACTICAL MESSAGING											
Fiscal Year	2008				2009				2010																						
	1	2	3	4	1	2	3	4	1	2	3	4																			
Acquisition Milestones																															
System Development (Note 1)	DMS Proxy		TSC/C CDS																												
Software S/W Delivery (DMS Proxy V 1.0) (Note 2)																															
Test & Evaluation Milestones Interoperability Demonstration JITC IV&V Certification	DMS Proxy		▲																												
Deliveries (Note 3, 4)			9					9			9																				

Notes:
1/ TSC/C CDS discontinued as directed by Naval Netwar FORCEnet Enterprise Board of Directors Jan 8, 2009
2/ Software Deliveries canceled per Naval NETWARCOM memo of 27 Feb 2009 which redefined the way ahead for Naval Messaging.
3/ Quantities of deliveries were changed to reflect updated fielding plan.
4/ Deliveries represent OPN hardware quantities.

Exhibit R-4a, Schedule Detail				**DATE:** May 2009				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS			**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION - TACTICAL MESSAGING				
Schedule Profile	**FY 2008**	**FY 2009**	**FY 2010**					
System Development DMS Proxy	1Q-4Q							
System Development TS/C CDS	3Q-4Q	1Q-3Q						
Interoperability Demonstration	3Q							
JITC IV&V Certification DMS Proxy	1Q-3Q							

Notes:

EXHIBIT R4, Schedule Profile			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET COMMUNICATIONS	PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION - TACTICAL SWITCHING ASHORE	



* Joint Interoperability Test Center (JITC)

Exhibit R-4a, Schedule Detail				**DATE:** May 2009				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS			**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION - TACTICAL SWITCHING ASHORE				
Schedule Profile - Tactical Switching Ashore	**FY 2008**	**FY 2009**	**FY 2010**					
Increment II IOC	2Q							
Increment II FOC			4Q					
Increment II Spiral B Hardware/Software Development	1Q-4Q	1Q-3Q						
Increment III Requirements Definition/Systems Specifications		2Q-4Q	1Q-3Q					
Increment III IOC								
Development Testing (DT) Increment II Spiral B	3Q	3Q						
JTIC Increment III								
IV&V/JITC Increment II Spiral B	4Q	3Q						
Systems of Systems Testing	1Q-4Q	1Q-4Q	1Q-4Q					
Increment II Spiral A Production/Installation	1Q-4Q	1Q						
Increment II Spiral B Production/Installation		2Q-Q4	1Q-4Q					
Increment III Production/Installation								
Deliveries - OPN		1Q						

* Joint Interoperability Test Center (JITC)

EXHIBIT R4, Schedule Profile																																
																															DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7									**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS																**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 1							
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones									△ MS B																							
System Development											Development △ Contract Award																					

Exhibit R-4a, Schedule Detail				**DATE:** May 2009				
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER AND NAME**			**PROJECT NUMBER AND NAME**				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS			0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 1				
Schedule Profile	**FY 2008**	**FY 2009**	**FY 2010**					
Milestone B (MS B)			1Q					
Contract Award			2Q					
System Development			3Q-4Q					

EXHIBIT R4, Schedule Profile																																
																															DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7									**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET COMMUNICATIONS																				**PROJECT NUMBER AND NAME** 0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 2			
Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones									△ MS B																							
System Development											△ Contract Award	Dev																				

Exhibit R-4a, Schedule Detail				**DATE:** May 2009				
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER AND NAME**			**PROJECT NUMBER AND NAME**				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET COMMUNICATIONS			0725 COMMUNICATIONS AUTOMATION - MOBILE NETWORKING HIGHBAND (MNH) INC 2				
Schedule Profile	**FY 2008**	**FY 2009**	**FY 2010**					
Milestone B (MS B)			1Q					
Contract Award			3Q					
System Development			4Q					

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT			PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM		
COST ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	**12.563**	**15.060**	**21.917**					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project develops communication system elements which provide positive command and control of deployed Ship Submersible Ballistic Nuclear (SSBN)s and fleet submarine broadcast connectivity to Ship Submersible Nuclear (SSN)s, Ship Submersible Guided Nuclear (SSGNs) and SSBNs. This project provides enhancements to the shore-to-ship transmitting systems and provides submarine capabilities to the Broadcast Control Authority (BCA) consistent with the Network Operation Center (NOC) architecture. The BCA provides the oversight and control for all fixed submarine broadcasts. 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 Broadcast Control Authority/Operational Control (BCA/OPCONs) to ensure Continuity-of-Operations Procedure (COOP) in the event of a BCA outage. Concept Development/System Planning provides Network Enabled Operations (NEO) ensuring the integration of multiple combinations of US - Allied data exchange. This is achieved within and between the dimensional constraints of the US and Allied BCA/OPCON spaces. Concept Development/System Planning also provides the modeling of unique Very Low Frequency/Low Frequency (VLF/LF) submarine communications from the large physical shore broadcast antennas to underwater depth penetration can be reflected in the future BCA/OPCON planning tools. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed Very Low Frequency VLF (FVLF) transmit systems are evaluated and tested through the High Voltage Improvement Program (HVIP). The Nuclear Command Control and Communications Long Term Solution (NC3 LTS) will replace the NC3 Hybrid Solution (HS) with a new NC3 architecture, the Defense Information Systems Network (DISN) Dedicated IP Network (DIN) (NC3 LTS) system. The primary function and mission of NC3 LTS is to provide accurate and reliable delivery of time critical messages for the nuclear forces. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages (EAM), Nuclear Command and Control (NC2) messages including, Nuclear Planning and Execution Systems (NPES) messages for force management, force direction and execution, and situation monitoring. Low Band Universal Communications System (LBUCS) provides operational capability through the VLF architecture to ensure system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput, ensuring more operational products are delivered to a submarine without risking mast exposure.

The LBUCS will continue its development effort in FY10 and the NC3 LTS program will be increasing the development efforts in FY10. Planned FY10 activities for NC3 LTS are completion of the Capabilities Development Document, Test and Evaluation Master Plan, and release of a Request for Proposal.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT	PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM

B. Accomplishments/Planned Program

Low Band Universal Communication System (LBUCS)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	4.784	5.949	9.370	
RDT&E Articles Quantity				

FY08 Accomplishments: Completed Milestone B.
FY09: Complete Request for Proposal (RFP). Award Prime Contract for EDM development of transmit terminal for testing. Contractor to begin development and integration of LBUCS transmit hardware and software.
FY10: Commence Engineering Development Model (EDM). Contractor continues development effort and Integration of LBUCS transmit hardware and software. Commence CPD development for transmit terminal in support of Milestone C. Complete Preliminary Design Review (PDR) for transmit terminal. Complete Critical Design Review (CDR) for transmit terminal. Continue updating acquisition documentation for Milestone C. Commence preparations of acquisition documentation for receive terminal.

Nuclear Command, Control Communications Long Term Solution (NC3 LTS)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	2.121	3.963	6.817	
RDT&E Articles Quantity				

FY08 Accomplishments: Completed Analysis of Alternatives (AoA). Commenced Capabilities Development Document (CDD) and System Performance Specification (SPS)/RFP. Commenced development of Test and Evaluation Master Plan (TEMP). Commenced preparation of Milestone B acquisition documentation.
FY09: Continue development of CDD. Continue development of RFP/SPS. Continue development of TEMP. Continue preparation of Milestone B acquisition documentation.
FY10: Complete CDD. Complete RFP. Complete TEMP. Complete Milestone B.

Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	3.398	2.490	3.820	
RDT&E Articles Quantity				

FY08 Accomplishments: Continued efforts for assessment of strategic communications capabilities and deficiencies and for evaluation of Nuclear Strategic Communications and Emergency Action Message delivery.
FY09: Continuation of strategic communications capabilities and deficiencies assessment for evaluation of Nuclear Strategic Communications and EAM delivery.
FY10: Continuation of strategic communications capabilities and deficiencies assessment for evaluation of Nuclear Strategic Communications and EAM delivery.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT	PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM

(U) B. Accomplishments/Planned Program

Concept Development/Systems Planning	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	1.353	1.603	0.945	
RDT&E Articles Quantity				

FY08 Accomplishments: Demonstrated an optimized bandwidth algorithm in a laboratory environment. Commenced integrate Joint/Allied NEO with other US Navy enterprise network (FORCEnet) applications. Completed a Project Arrangement with United Kingdom (UK) for Experimentation.
FY09: Continue the integration of Joint/Allied NEO with other US Navy enterprise network (FORCEnet) applications.
FY10: Continue the integration of Joint/Allied NEO with other FORCEnet applications.

High Voltage Improvement Program	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.410	0.521	0.516	
RDT&E Articles Quantity				

FY08 Accomplishments: Commenced examination of ultra quick cut off devices to prevent overload conditions.
FY09: Continue examination of ultra quick cut off devices to prevent overload conditions. Commence examination of Nanocrystalline Ferrites to reduce the loss and size of Helix Enclosures.
FY10: Complete examination of ultra quick cut off devices to prevent overload conditions. Continue examination of Nanocrystalline Ferrites to reduce the loss and size of Helix Enclosures.

Common Submarine Radio Room (CSRR)	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.497			
RDT&E Articles Quantity				

FY08 Accomplishments: Completed modernization development and testing of Digital Modular Radio and Super High Frequency capabilities.

Broadcast Control Agency Architecture	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost		0.534	0.449	
RDT&E Articles Quantity				

FY09: Commence development of SUBOPAUTH communications tools to automate functionality at the SUBOPAUTH to reduce operational workload.
FY10: Continue development of SUBOPAUTH communications tools.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER**	**PROJECT NUMBER AND NAME**
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET TACTICAL DEVELOPMENT	1083 SHORE TO SHIP COM SYSTEM

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
3107 Submarine Broadcast Support	4.086	3.130	0.105					

D. ACQUISITION STRATEGY:

Low Band Universal Communications System (LBUCS): LBUCS is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System (FSBS) which are approaching their operational end of life. In December of 2008 a Request for Proposal to develop a follow on solution to the shore-based Transmit subsystem was released to industry to address end of life issues and new FSBS Information Assurance (IA) requirements. A cost plus incentive fee contract will be awarded for Transmit subsystem development in 4QFY09 with three sequential fixed price options Contract Line Item Numbers (CLINs) for production and deployment.

The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS): NC3 LTS will provide accurate and reliable delivery of time-critical messages for the nuclear forces by developing a Defense Information Systems Network (DISN) Dedicated IP Network (DIN). Milestone B for the program is projected in 4QFY10. Contract planning activities are scheduled to commence in 4QFY09, leading to a Request for Proposal release in 3QFY10.

EXHIBIT R-3, RDT&E Project Cost Analysis												DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			PROGRAM ELEMENT 0204163N FLEET TACTICAL DEVELOPMENT						PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM			
Cost Categories	**Contract Method & Type**	**Performing Activity & Location**	**Total PY s Cost**	**FY 09 Cost**	**FY 09 Award Date**	**FY 10 Cost**	**FY 10 Award Date**	**FY 11 Cost**	**FY 11 Award Date**	**Cost to Complete**	**Total Cost**	**Target Value of Contract**
Primary Hardware Development	Various	Various	14.582	4.737	Nov-09	9.455	Nov-10					
Ancillary Hardware Development	Various	Various	1.166	0.575	Nov-09	0.575	Nov-10					
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	27.325	2.600	Nov-09	3.184	Nov-10					
Systems Engineering	WR	SSC San Diego, CA	43.254	0.655	Nov-09	0.670	Nov-10					
Systems Engineering	WR	Misc. Labs, NUWC, RI	12.475	0.498	Nov-09	0.498	Nov-10					
Systems Engineering	WR	US Army, Monmouth, NJ	6.572	0.525	Nov-09	0.525	Nov-10					
Systems Engineering	Various	Various	16.154									
Subtotal Product Development			**121.528**	**9.590**		**14.907**		**-**				
Remarks:												
Development Support			5.330	0.909	Nov-09	3.212	Nov-10					-
Software Development	WR	SSC San Diego, CA	9.064									
Software Development	TBD	TBD	-	1.220	TBD	1.830	TBD					
Training Development			-									
Integrated Logistics Support			0.960	0.215	Nov-09	0.215	Nov-10					
Acquisition/Program Development			0.984	0.261	Nov-09	0.261	Nov-10					
Technical Data			2.822									
GFE			-									
Subtotal Support			**19.160**	**2.605**		**5.518**						
Remarks:												

EXHIBIT R-3, RDT&E Project Cost Analysis												DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					PROGRAM ELEMENT 0204163N FLEET TACTICAL DEVELOPMENT				PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM			
Cost Categories	**Contract Method & Type**	**Performing Activity & Location**	**Total PY s Cost**	**FY 09 Cost**	**FY 09 Award Date**	**FY 10 Cost**	**FY 10 Award Date**	**FY 11 Cost**	**FY 11 Award Date**	**Cost to Complete**	**Total Cost**	**Target Value of Contract**
Developmental Test & Evaluation												
Operational Test & Evaluation												
Strategic OP Systems Perf Evaluation	CPFF	APL/JHU, Baltimore, MD	17.633	1.482	Dec-09	0.104	Dec-10					
System Testing	Various	Various	7.959	0.448	Dec-09	0.448	Dec-10					
Tooling												
GFE												
Subtotal T&E			**25.592**	**1.930**		**0.552**		**-**				
Remarks:												
Contractor Engineering Support	WR	US Army, Monmouth, NJ	1.375	0.201	Dec-09	0.201	Dec-10					
Government Engineering Support	WR	Various	1.365	0.456	Dec-09	0.456	Dec-10					
Program Management Support	Various	Various	4.938	0.228	Dec-09	0.233	Dec-10					
Travel			0.150	0.050		0.050						
Subtotal Management			**7.828**	**0.935**		**0.940**		**-**				
Remarks:												
Total:			**174.108**	**15.060**		**21.917**		**-**				

EXHIBIT R4, Schedule Profile
Low Band Universal Communications System

DATE:
May 2009

APPROPRIATION/BUDGET ACTIVITY
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7

PROGRAM ELEMENT NUMBER AND NAME
0204163N FLEET TACTICAL DEVELOPMENT

PROJECT NUMBER AND NAME
1083 SHORE TO SHIP COM SYSTEM-LBUCS

Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	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 Transmit					▲ MS-B																											
Receive																																
Requirements Definition Transmit									△			CPD																				
Receive																																
Contractual Milestones/Timeline Transmit					▲ RFP			△ CA		△ PDR		△ CDR																				
								△				EDM																				
Receive																																
Test & Evalutaion																																
Equipment Procurement Transmit																																
Receive																																

EXHIBIT R-2BUDGET ITEM JUSTIFICATION
CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R4, Schedule Profile							**DATE:** May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7		**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET TACTICAL DEVELOPMENT				**PROJECT NUMBER AND NAME** 1083 SHORE TO SHIP COM SYSTEM-LBUCS		
Schedule Profile	FY2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Acquisition Milestones:								
MS B		1Q						
Requirements Definition:								
CPD			2Q-4Q					
Contractual Milestones/Timeline								
RFP - Transmit		1Q						
Contract Award - Transmit		4Q						
PDR - Transmit			2Q					
CDR -Transmit			4Q					
EDM - Transmit		4Q	1Q-4Q					

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile Nuclear Command, Control, Communications Systems - Long Term Solution																																DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7									**PROGRAM ELEMENT NUMBER AND NAME** 0204163N FLEET TACTICAL DEVELOPMENT													**PROJECT NUMBER AND NAME** 1083 SHORE TO SHIP COM SYSTEM-NC3-LTS											
Fiscal Year	2008				2009				2010				2011				2012				2013				2014				2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones												MS-B																				
Requirements Definition		AdA				CDD																										
Contractual Milestones/Timelines										CPC	RFP																					
Test & Evaluation:									TEMP																							
Equipment Procurement																																

CLASSIFICATION:

Exhibit R-4a, Schedule Detail Nuclear Command, Control, Communications Systems - Long Term Solution (NC3 LTS)							**DATE:** May 2009	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	**PROGRAM ELEMENT** 0204163N FLEET TACTICAL DEVELOPMENT				**PROJECT NUMBER AND NAME** 1083 SHORE TO SHIP COM SYSTEM-NC3-LTS			
Schedule Profile	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Acquisition Milestones:								
MS B			4Q					
Requirements Definition:								
AoA	1Q-2Q							
CDD	2Q-4Q	1Q-4Q	1Q-2Q					
Development Effort:								
CPC			2Q-4Q					
RFP			3Q					
Test & Evaluation:								
Test & Evaluation Master Plan		2Q-4Q	1Q-4Q					

EXHIBIT R-2a, RDT&E Project Justification						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7			PROGRAM ELEMENT NUMBER 0204163N FLEET TACTICAL DEVELOPMENT			PROJECT NUMBER AND NAME 9999 AN-USQ-165 CARD UPGRADE		
COST ($ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Project Cost	0.971							
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Develop a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	**PROGRAM ELEMENT NUMBER**	**PROJECT NUMBER AND NAME**
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	0204163N FLEET TACTICAL DEVELOPMENT	9999 AN-USQ-165 CARD UPGRADE

B. Accomplishments/Planned Program

AN-USQ-165 Card Upgrade	FY 08	FY 09	FY 10	FY 11
Accomplishments/Effort/Subtotal Cost	0.971			
RDT&E Articles Quantity				

FY08 Accomplishments: Developed a Radio over Internet Protocol (RoIP) interface for the Tactical Variant Switch (TVS) AN-USQ-155 to be compatible with the DoD /DoN directive for Internet Protocol (IP) based communications, switching, and distribution of voice and media via common networks as well as Integrated Services Digital Network (ISDN) and analog connections.