CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: **February-07**		
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**				R-1 ITEM NOMENCLATURE **PE: 0204163N TITLE: FLEET COMMUNICATIONS**				
COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	**30.482**	**26.997**	**23.108**	**18.903**	**15.533**	**8.143**	**12.918**	**10.787**
0725 Communications Automation	14.746	15.253	9.744	9.189	6.292	3.880	3.952	4.025
1083 Shore to Ship Communications	15.736	11.744	13.364	9.714	9.241	4.263	8.966	6.762

(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), Joint Network Management System (JNMS), Automated Digital Network System (ADNS), Naval Global Directory Services, and Tactical Switching Ashore [formerly Shore Infrastructure Modernization (SIM)].

ADNS is the method by which tactical Navy units (Surface, Subsurface, and Air Deployed 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. Utilization of ADNS allows Unclassified, Secret, Top Secret, 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.

Tactical Messaging (formerly NAVMACS/SMSII) developed joint/combined individual and organizational message handling for United States 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 interfaces to the Defense Message System (DMS) and legacy ashore messaging systems. DMS Proxy will develop the interface with Integrated Shipboard Networks System (ISNS) to allow removal of DMS Components from all ships.

Naval Global Directory Service (NGDS): The NGDS will develop a directory services architecture providing enhancements and efficiencies for security, application accessibility, and Naval Identity Management (IdM) that span Naval enterprise-wide operations across the Navy Marine Corps Intranet (NMCI), OCONUS Navy Enterprise Network (ONE-NET), Marine Corps Enterprise Network (MCEN) and Naval Afloat Networks/(Information Technology (IT)-21 network domains. The projected NGDS capabilities include: Authentication to enterprise applications; Support for an enterprise Single Sign On (SSO) solution; Backbone for federating (sharing) identity data amongst the Naval Domains, afloat environments, and external sources; Storage for Public Key Infrastructure (PKI) material and other credentials; Basic “Locator” services.

The NGDS builds upon the initial research, development and deployment of the Navy Marine Corps White Pages, in addition to other requirements such as the Navy Marine Corps Intranet’s (NMCI) directory service, Navy Marine Corps Portal (NMCP) directory service and Single Sign On (SSO) initiatives, and the IT-21 Windows 2000 shipboard integrated directory service . The projected NGDS capabilities include: Authentication to enterprise applications; Support for an enterprise SSO solution; Domain Naming Service (DNS) for a Naval Enterprise network De-Militarized Zone (DMZ); Backbone for federating (sharing) identity data amongst the Naval Domains, afloat environments, and external sources; Storage for Public Key Infrastructure (PKI) material and other credentials; Basic “Locator” services; Additional advanced directory or identity based functions.

NGDS delivers an integrated directory service infrastructure across the Naval enterprise both ashore and afloat by building trusted relationships between people, applications, services, and other resources throughout the network. Once established, NGDS must manage and maintain these relationships regardless of the user’s or services location.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT	

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 Internet Protocol (IP) connectivity, separation of enclaves, reuse of unused enclave bandwidth, and Ship to Shore Tactical 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 will converge all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. In addition, the Increment III architecture will incorporate an IPv4/IPv6 dual stack and a ciphertext 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 Increment III will serve as the Navy tactical interface (Gateway) for IP Networking with Transformational Satellite (TSAT), Joint Tactical Radio System (JTRS), High Assurance Internet Protocol Encryptor (HAIPE), Advanced Extremely High Frequency (AEHF), and other Future Department of Defense (DoD) Transformational Command, Control, Communications, Computers , & Intelligence (C4I) Programs.

The Tactical Switching Ashore (TSw) Infrastructure Modernization (SIM) 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 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 redundant communications paths, provide secure and available communications, provide dynamic bandwidth management, and reduce costly dependencies on legacy systems. This plan will be designed to increase efficiencies, and reduce manpower and the overall footprint of the Navy's shore sites. 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 to fight the War on Terrorism.

The Shore to Ship Communications System develops communications systems elements which provide positive command and control of deployed Ship, Submersible, Ballistic, Nuclear (Submarines (SSBNs), Ship, Submersible, Guided Nuclear (Submarines (SSGNs) and attack Ship, Submersible Nuclear (Submarines (SSNs). Provides the communication elements for continuous assessment of the command and control link between Secretary of Defense and missile platforms. Provides the joint system design for Emergency Action Message (EAM) distribution to all nuclear platforms. Provides the tools for strategic command and control planning to deployed SSBNs including shore infrastructure.

Low Band Universal Communications System (LBUCS) will provide operational capability, through the Very Low Frequency architecture, to insure system life extension and flexibility of Submarine Broadcast traffic to the submarine in stealth posture. The flexibility includes bandwidth efficiency, ensuring more operational products are delivered to a submarine without risking mast exposure.

The shore Submarine Operating Authority (SUBOPAUTH) was downsized from six to four nodes. In order to ensure Continuity of Operations (COOP) and ongoing robustness in a reduced architecture, the Submarine Operating Authority (SUBOPAUTH) architecture provides for increased commonality among SUBOPAUTHs. This ensures robust operation, improved integration between Submarine Operational Control and support communications, and Continuity of Operations in the event of a SUBOPAUTH casualty.

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.

Congressional plus-up to support development of a Floating Area Network (FAN) plan and architecture enabling a direct Line of Sight (LOS), wireless, Transmission Control Protocol/Internet Protocol (TCP/IP) network among intra-battle group ships.

Congressional plus-up to support development of a portable Cole emergency radio system (MRC-105 Emergency Radio).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	

(U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2006	FY 2007	FY 2008	FY 2009
FY07 President's Budget	32.149	27.189	21.794	15.810
FY08/09 President's Budget:	30.482	26.997	23.108	18.903
Total Adjustments	-1.667	-0.192	1.314	3.093
Summary of Adjustments				
Program Adjustments	-1.161		10.518	10.117
Congressional Action	0.018			
Sec. 8125 Revised Economic Assumptions	0.008			
NWCF Rate Adj. SPAWAR Systems Centers			0.139	0.159
NWCF Rate Adj. NUWC				0.005
Small Business Innovation Research (SBIR) Tax	-0.532			
CIVPERS Adjustments			-9.346	-7.385
Sec 8106: Revised Economic Assumptions			0.121	0.146
Non-Purchase Inflation Adjustment			-0.118	0.051
Sec. 8023 Federally Funded RDT&E		-0.089		
Sec. 8106 Revised Economic Assumptions		-0.103		
Subtotal	-1.667	-0.192	1.314	3.093

(U) Schedule:

(U) Technical:

Not Applicable.

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2007**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT				PROJECT NUMBER AND NAME 0725 Communications Automation			
COST ($ in Millions)	FY2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	**14.746**	**15.253**	**9.744**	**9.189**	**6.292**	**3.880**	**3.952**	**4.025**
RDT&E Articles Qty								

(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 Defense Message System (DMS) organizational messages to the user's desktop throughout the Integrated Shipboard Networks System (ISNS). 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 Internet Protocol (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 will converge all Navy Tactical Voice, Video, and Data requirements into a converged IP Data stream. In addition, the Increment III architecture will incorporate an IPv4/IPv6 dual stack and a ciphertext security architecture to align to the Global Information Grid (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 Increment III will serve as the Navy Tactical Interface (Gateway) for IP Networking with Transformational Satellite (TSAT), Joint Tactical Radio System (JTRS), High Assurance Internet Protocol Encryptor (HAIPE), Advanced Extremely High Frequency (AEHF), and other Future DoD transformational C4I Programs. Global Directory Service (NGDS): Naval Global Directory Services is a key component of the infrastructure that will be leveraged to support a variety of network operations. The NGDS will develop a directory services architecture providing enhancements and efficiencies for security, application accessibility, and naval Identity Management (IdM) that span Naval enterprise-wide operations across the Navy Marine Corps Intranet (NMCI), OCONUS Navy Enterprise Network (ONE-NET), Marine Corps Enterprise Network (MCEN) and Naval Afloat Networks/IT-21 network domains. The NGDS builds upon the initial research, development and deployment of the Navy Marine Corps White Pages, in addition to other requirements such as the Navy Marine Corps Intranet's (NMCI) directory service, Navy Marine Corps Enterprise Services (NMES) directory service and Single Sign On (SSO) initiatives, and the IT-21 Windows 2000 shipboard integrated directory service. NGDS delivers an integrated directory service infrastructure across the Naval enterprise both ashore and afloat by building trusted relationships between people, applications, services, and other resources throughout the network. Once established, NGDS will manage and maintain these relationships regardless of the user's or services' location. Tactical Switching Ashore will support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, network capability.

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY06	FY 07	FY 08	FY 09
Automated Digital Network System (ADNS)	5.835	5.025	3.879	3.665
RDT&E Articles Quantity		4		

FY06: Completed interoperability and operational testing for ADNS Increment (INC) II. Developed advanced traffic management, control and Quality of Service (QoS) capabilities. Demonstrated dynamic routing scheme. Continued support of FORCEnet demonstrations (Trident Warrior series). Awarded contract for system development and demonstration for INC III. INC III will provide converged voice, video, and data; increased bandwidth capacity upgrades to allow transfer at 25 and 50 Mega Bits per Second (Mbps); conversion to a Ciphertext Security Backbone using Internet Protocol version 6 (IPv6) capability, and the ability to converge all Surface Units into a Meshed contiguous Internet Protocol (IP) environment.
FY07: Conduct Increment IIa formal Developmental and Operational Testing (DT/OT). Continue Incrementally funding INC III System Development and Demonstration phase. INC III contractor will conduct system requirements review and deliver an ADNS Increment III system and subsystem specification. Evaluate industry produced INC III Engineering Demonstration Models (EDMs). Conduct system Preliminary and Critical Design Review ((PDR) and (CDR)).
FY08: Continue the system development and demonstration phase of ADNS Increment III with required interfaces. Conduct Increment III formal Developmental Testing (DT). Develop 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, Subsurface, Airborne, and Shore.)
FY09: Complete formal Operational Testing of Increment III. Develop system modification of Increment III for HAIPE integration. Develop and update system and subsystem interface designs for integration with new SATCOM and Radio Frequency (RF) paths, as they emerge.

	FY06	FY 07	FY 08	FY 09
Tactical Messaging (NAVMACS)	1.066	-	1.370	1.315
RDT&E Articles Quantity				

FY06: Continued development and test efforts for emerging technology and product upgrades. Initiated development of way-ahead messaging for unit level platforms to include Defense Messaging System/Integrated Shipboard Network System (DMS/ISNS) to allow shipboard messaging consumers to communicate with shore based Defense Message System (SMS) Infrastructure.
FY07: Planning and testing for DISA developed Proxy product will occur in FY08 and FY09.
FY08: Initiate development of way-ahead messaging for unit level platforms to include DMS Proxy Solution to allow shipboard IP messaging consumers to communicate with shore based Automated Message Handling Systems (AMHS). Develop and test efforts for emerging technology and product upgrades.
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.

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 7	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT	0725 Communications Automation

(U) B. Accomplishments/Planned Program

	FY06	FY 07	FY 08	FY 09
Naval Global Directory Services	0.383	0.332	0.340	0.313
RDT&E Articles Quantity				

FY06: Continued the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assisted in the continuing convergence of NMCI, ONE-NET, MCEN and IT-21 environments. Provided developmental engineering support for establishment of the Naval Network Identity (NNI) Registry Service to be used to register/issue unique identifiers to all Naval users. Supported Navy directory testing efforts.
FY07: Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, MCEN and IT-21 environments. Provide developmental engineering support for shore-based identity data sharing/synchronization. Support Navy directed testing efforts.
FY08: Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, MCEN and IT-21 environments. Provide developmental engineering support for establishment of the Naval Network Identity (NNI) Registry Service to be used to register/issue unique identifiers to all Naval users. Support Navy directory testing efforts.
FY09: Continue the development of the Naval Global Directory Service (NGDS) - enterprise wide, integrated directory service architecture. Assist in the continuing convergence of NMCI, ONE-NET, MCEN and IT-21 environments. Provide developmental engineering support for ship-to-shore identity data sharing/synchronization, and continue integration of shore authoritative identity sources

	FY06	FY 07	FY 08	FY 09
Tactical Switching (Ashore)	7.462	9.896	4.155	3.896

FY06: Initiated Increment II Spiral A Network Management and Control System (NMS) (Management Capability). Developed a Request for Procurement (RFP) for global integration to develop Commander Critical Information Requirements (CCIRs), Information Exchange Requirements (IERs) and Reporting constructs supporting the NMS deployment. Additionally, selected a system integrator to develop a shore communications architecture that will automate, remote or consolidate communications technical control facilities to the extent possible supporting migration of all services to an all IP infrastructure. Identified and integrated interfaces supporting DoD Teleport and the Defense Information Systems Network (DISN) CORE The requirement for this architecture is to provide a seamless connection between the shore tactical support infrastructure and the deployed user. In addition, the program built upon the current Commercial Off-The-Shelf (COTS) NMS capability (situational awareness / monitoring) to develop management and control capabilities.
FY07: Complete the development of Increment II Spiral A Network Management and Control System (NMS) (Management Capability) that began in FY06. Complete the system integrators task to develop a shore communications architecture that w Automate, Remote or Consolidate communications technical control facilities to the extent possible supporting migration of all services to an all IP infrastructure. Initiate development of Increment II Spiral B NMS (automation capability).
FY08: Complete the Increment II Spiral B development that began in FY07. Develop and design a plan to eliminate bandwidth limitations within the architecture by designing redundant communications paths either physical or virtual, providing real ti integrated security, enabling dynamic bandwidth management, and reducing costly dependencies on legacy systems. In addition, the program will expand the monitoring, management, and control capability developed in FY06/FY07 to fully automate the NMS capability. This new capability requires less manual intervention and will serve as the backbone technology to reduce the Navy communication facilities infrastructure from 4 Fleet Network Operation Centers (NOCs) to 2 Regional Network Operations and Security Centers (RNOSC). Efforts outlined in Increment II Spiral A and B provide the foundation for reducing the manpower and facilities which will enable substantial FYDP savings.
FY09: Initiate Increment III NMS (GIG/Joint/All IP Integration Capability). Complete the design, development and implementation of the upgrades to the tactical switching Enterprise NMS (ENMS) and NOC systems to allow for full integration with the Joint Community on the All IP 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 warfighters 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 fu 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, SCI and multiple CENTRIXS network enclaves.

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT	0725 Communications Automation

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Complete	To Cost	Total
3050 – Comm Auto - Tactical Messaging	11.649	4.844	7.222	7.938	8.654	4.079	3.788	3.848	Continuing	Continuing	
3050 – Comm Auto – ADNS	23.966	19.276	47.620	44.861	31.653	43.449	41.714	42.417	Continuing	Continuing	
3050 – Comm Auto – Tactical Switching (Ashore)	23.722	32.101	36.165	31.917	20.653	20.483	25.605	26.035	Continuing	Continuing	

(U) E. ACQUISITION STRATEGY: *

ADNS: Evolutionary acquisition approach with overlapping development and implementation phases for defined Increment I, II, and III system baselines, as well as future increments as necessary to deliver capabilities to Fleet Tactical Units. Increments I and II will use existing competitively awarded contracts; however, Increment III will be based on a new Contracting Strategy to include the use of 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. 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. The contractir strategy and initiatives used for Increment III will form the foundation for future follow-on Increments deemed necessary to deliver capabilities to the Fleet.

Tactical Messaging (formerly 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 acquisition streamlining initiatives in addition to maintaining the benefits of competitive, best value contracting.

NGDS: Evolutionary acquisition approach with overlapping development and implementation phases to mitigate technical and financial risks. Integrate rapidly evolving technologies as deemed feasible and acceptable based on security and operational risks. Leverage COTS products and existing Navy/GSA contracts for small-scale implementation if NGDS hardware and software.

Tactical Switching Ashore Evolutionary acquisition approach uses Spiral Development and implementation. Existing contract vehicles are used during Increment I implementation of procurement upgrades to existing shore lega equipment at the major communication centers (NCTAMS PAC, NCTAMS LANT, NCTAMS EURCENT, NCTS Bahrain, and NCTS San Diego) and to include 40+ shore communication facilities (COMSTATIONs, NOCs, Mini-NOC and STEP sites). Increment I upgrades serve as an enabler to Increment II and III activities. Based upon the future shore communication architecture as defined by the Navy, Increment II transitions the Navy's 3 NCTAMS and tw major 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/DoD Net-Centric environment. Increment II will be organized into two Spirals. Each spiral will build upon the previous capability and serve as risk mitigation for the succeeding effort. Increment III will introduce new capability that will allow integration with the joint community on the All Internet Protocol (IP) Global Information Grid (GIG). This strategy provides flexibility in a rapidly evolving technology environment and allows earlier implementation of developmental technology as it becomes available.

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

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)									DATE: **February 2007**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT						PROJECT NUMBER AND NAME 0725 Communications Automation				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date		FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC	1.025	0.198	Aug-06	0.000			0.000			1.223	5.500
Primary Hardware Development	TBD	TBD	1.000	0.000		0.806	TBD		1.009	TBD	Continuing	Continuing	
Primary Hardware/Software	CPFF	Air Force	2.078	3.120	Jun-07	1.368	TBD		1.280	TBD			
Systems Engineering	WX	SSC	12.927	3.880	Dec-06	0.812	TBD		0.760	TBD	Continuing	Continuing	
Systems Engineering	VAR	VAR	3.520	0.000		0.342	TBD		0.404	TBD	Continuing	Continuing	
Systems Engineering	TBD	TBD	1.502	0.000		0.555	TBD		0.404	TBD	Continuing	Continuing	
Prime Mission Product	PO	SSC	4.353	0.435	Dec-06	0.388	TBD		0.257	TBD	Continuing	Continuing	
Subtotal Product Development			26.405	7.633		4.271			4.113		0.000	42.422	
Remarks:													
Development Support	WX	SSC	0.160	0.000		0.161	TBD		0.294	TBD		0.615	
Software Development	Var	Various	5.501	0.418	Dec-06	0.552	TBD		0.757	TBD	Continuing	Continuing	
Integrated Logistics Support	TBD	TBD	1.000	0.000		0.703	TBD		0.605	TBD		2.308	
Documentation	TBD	TBD	0.280	0.616		0.000			0.000			0.896	
Technical Data	TBD	TBD	0.500	0.000		0.502	TBD		0.404	TBD		1.406	
Studies and Analysis	WX	SSC	0.960	0.000		0.728	TBD		0.726	TBD		2.414	
Subtotal Support			8.401	1.034		2.646	TBD		2.785	TBD	Continuing	Continuing	
Remarks:													

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2007**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7** | PROGRAM ELEMENT: PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT | PROJECT NUMBER AND NAME: 0725 Communications Automation

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	SSC	0.844	1.096	Dec-06	0.470	TBD	0.440	TBD	Continuing	Continuing	
Operational Test & Evaluation	VAR	VAR	4.280	0.571	Dec-06	0.251	TBD	-		Continuing	Continuing	
Operational Test & Evaluation	MIPR	OPTEVFOR	0.371	0.751	TBD	0.100		-			1.222	
Operational Test & Evaluation	VAR	VAR	0.350	-		-		-			0.350	
Subtotal T&E			5.845	2.418		0.821		0.440		Continuing	Continuing	

Remarks:

Contractor Engineering Support	VAR	VAR	0.481	0.119	Dec-06	0.161	TBD	0.353	TBD	Continuing	Continuing	
Government Engineering Support	WX	SSC	0.380	0.132	Dec-06	0.201	TBD	0.041	TBD			
Program Management Support	VAR	SSC	1.973	0.130	Dec-04	0.139	VAR	0.040	VAR	Continuing	Continuing	
Program Management Support	CPAF	VAR	3.040	3.787	Nov-06	1.505	TBD	1.416	TBD	Continuing	Continuing	
Subtotal Management			5.874	4.168		2.006		1.851		Continuing	Continuing	

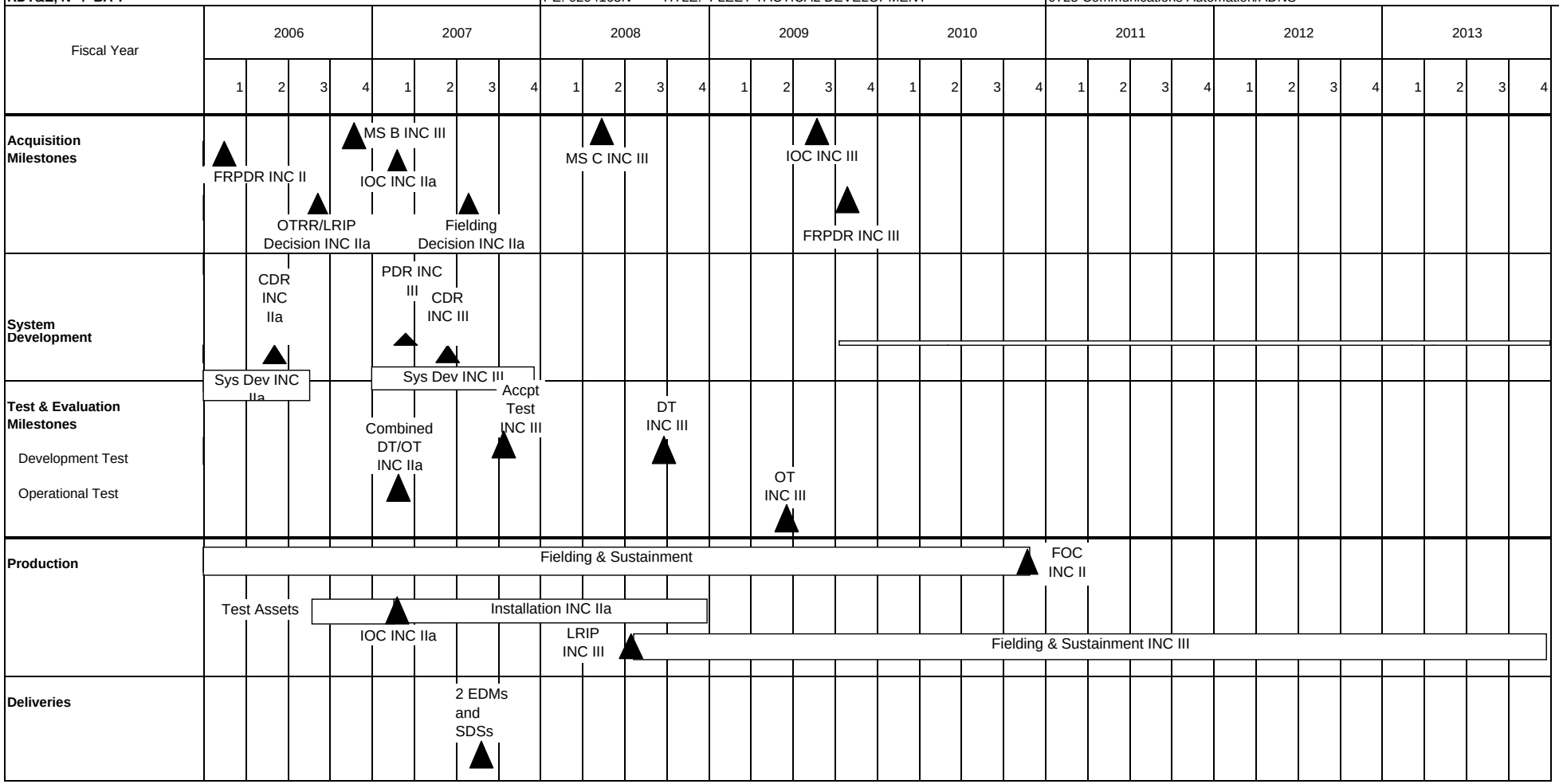
Remarks:

Total Cost			46.525	15.253		9.744		9.189		Continuing	Continuing	

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R4, Schedule Profile		DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT	0725 Communications Automation/ADNS



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

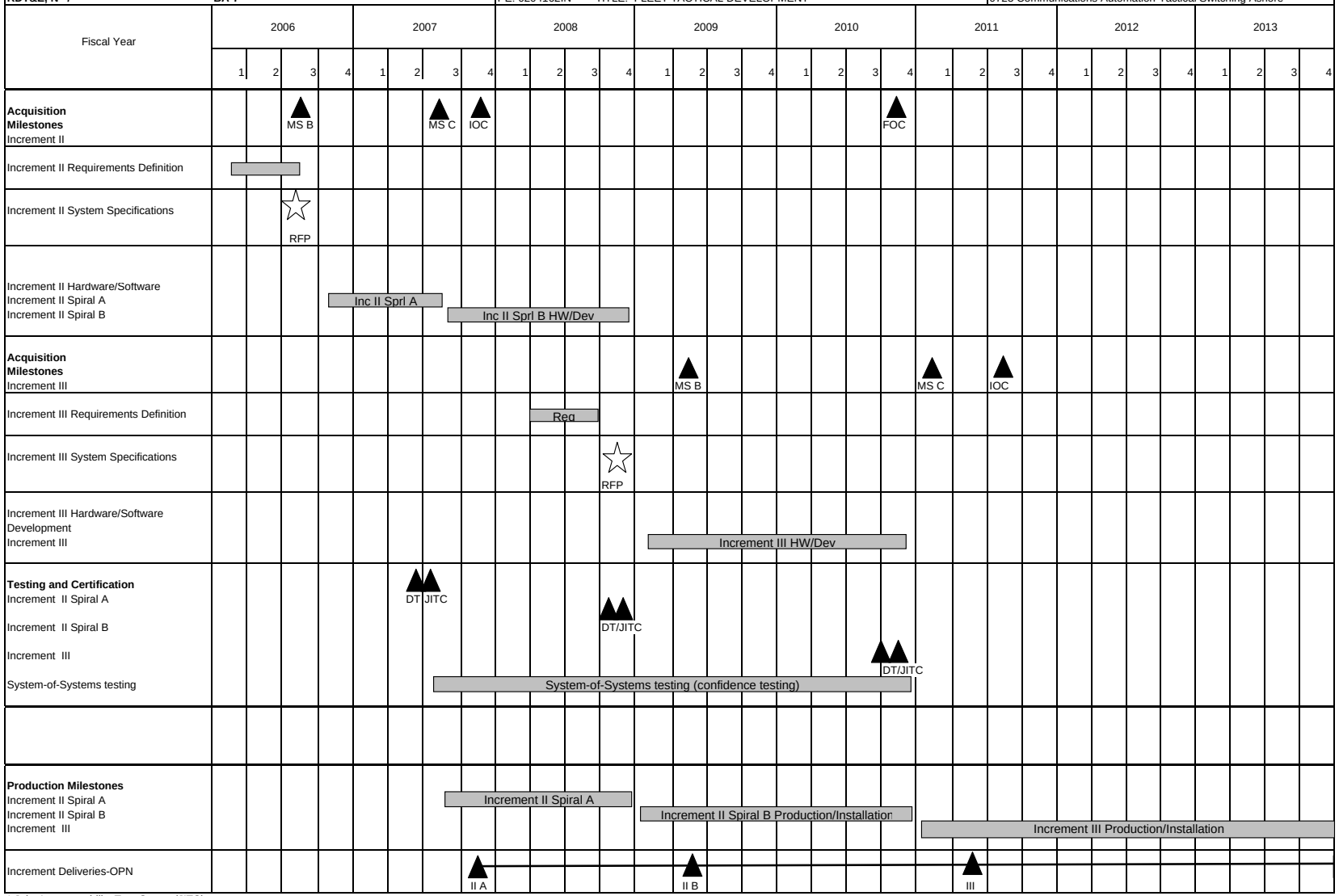
CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: **February 2007**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT					PROJECT NUMBER AND NAME 0725 Communications Automation/ADNS		
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
INCREMENT I *								
INCREMENT II								
*Initial Traffic Management, Shore **(TMS)***								
Fielding Decision								
Operational Testing (OT)								
JITC Certification								
Full Operational Capability (FOC)					4Q			
INCREMENT IIa								
*Voice Over IP **(VOIP)***								
System Development	1Q-3Q							
Critical Design Review (CDR)	2Q							
OTRR/LRIP Decision	3Q							
Operational Testing (OT)		1Q						
Fielding Decision		3Q						
Initial Operational Capability (IOC)		1Q						
INCREMENT III								
Core Capability - Converged IP, Meshed, IPv6, Black Core, 25/50 Mbps								
Prototype Phase								
System Design Review (SDR)								
Preliminary Design Review (PDR)		1Q-2Q						
System Development		1Q-4Q						
Milestone C (MS C)			2Q					
Critical Design Review (CDR)		2Q-3Q						
Developmental Testing (DT)		3Q-4Q	3Q-4Q					
Operational Testing (OT)				2Q-3Q				
Low Rate Initial Production (LRIP)			2Q-3Q					
Full Rate Production Decision Review (FRPDR)				4Q				
Initial Operational Capability (IOC)				3Q				
Interface Design Development with SATCOM and Radio Frequency (RF) paths				4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

CLASSIFICATION:
UNCLASSIFIED

EXHIBIT R4, Schedule Profile			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA-7**	PE: 0204162IN TITLE: FLEET TACTICAL DEVELOPMENT	0725 Communications Automation-Tactical Switching Ashore



* Joint Interoperability Test Center (JITC)

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: **February 2007**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT					PROJECT NUMBER AND NAME 0725 Communications Auto-Tactical Switching Ashore		
Schedule Profile - Tactical Switching Ashore	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Increment II Milestone B	3Q							
Increment II Milestone C		3Q						
Increment II IOC		4Q						
Increment II FOC					4Q			
Increment II Spiral A Hardware/Software Development	4Q	1Q-3Q						
Increment II Requirements Definition	1Q-3Q							
Increment II Systems Specifications	3Q							
Increment II Spiral B Hardware/Software Development		3Q-4Q	1Q-4Q					
Increment III Requirements Definition			2Q-3Q					
Increment III Systems Specifications			4Q					
Increment III Milestone B				2Q				
Increment III Milestone C						1Q		
Increment III IOC						3Q		
Increment III Hardware/Software Development				1Q-4Q	1Q-4Q			
Development Testing (DT) Increment II Spiral A		2Q-3Q						
Development Testing (DT) Increment II Spiral B			4Q					
Development Testing (DT) Increment III					4Q			
Systems of Systems Testing		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
Increment II Spiral A Production/Installation		3Q-4Q	1Q-4Q					
Increment II Spiral B Production/Installation				1Q-4Q	1Q-4Q			
Increment III Production/Installation						1Q-4Q	1Q-4Q	
Deliveries - OPN		4Q	3Q	2Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R4, Schedule Profile			DATE: **February 2007**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N /	PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT		0725 Communications Automation/Tactical Messaging

Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	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
Program Milestones																																
Pilot Phase									DMS Proxy																							
Development									Advanced Organizational Messaging																							
In-Progress Review (Multiple Baselines)	△ IPR		△ IPR						△ IPR		△ IPR		△ IPR		△ IPR		△ IPR		△ IPR		△ IPR		△ IPR									
S/W Delivery		△ JITC							△ LAB		△ JITC				△ LAB		△ JITC															
Software																																
S/W Delivery 2.4																																
S/W Delivery 2.5																																
S/W Delivery DMS 3.1																																
S/W Delivery DMS Proxy		△																														
S/W Delivery Way-Ahead SW																		△														
DISA DMS MR Delivery				△					△					△					△					△								
Test & Evaluation Milestones																																
Development Test									DT						DT																	
Operational Test																			OA/OT													
JITC IV&V Certification																																
Deliveries			2				33				49				56				80				16				17				17	

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

* Joint Interoperability Test Center (JITC)

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-4a, Schedule Detail						DATE: **February 2007**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET TACTICAL DEVELOPMENT				PROJECT NUMBER AND NAME 0725 Communications Automation/Tactical Messaging			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Win2K/Development	1Q-2Q							
IP Broadcast								
Advanced Organizational Messaging			1Q-4Q	1Q-4Q	1Q-3Q			
ISNS/DMS CO-HOST	1Q-2Q							
IPR	1Q,3Q		1Q,3Q	1Q,3Q	1Q,3Q	1Q,3Q		
EMD - Lab			1Q	3Q				
EMD - JITC	2Q		3Q		1Q			
S/W Delivery 2.3								
S/W Delivery 2.4								
S/W Delivery 2.5								
S/W Delivery DMS 3.1								
S/W Delivery Way-Ahead					2Q			
DISA DMS MR	4Q		1Q	2Q	3Q	4Q		
Development Test			1Q-4Q	2Q-4Q	1Q			
Operational Assessment/Test			1Q		2Q-4Q			
JITC IV&V Certification	1Q-3Q		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Deliveries	2	33	49	56	80	16	17	17

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS		1083 Shore to Ship Communications

COST ($ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost 1083 Shore to Ship Communications	**15.736**	**11.744**	**13.364**	**9.714**	**9.241**	**4.263**	**8.966**	**6.762**
RDT&E Articles Qty								

(U) 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 (SSBNs) and fleet submarine broadcast connectivity to Ship, Submersible, Nuclear (SSNs), Ship, Submersible, Guided Missile (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. Effective utilization of this communications system's 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 Broadcast Control Authority/ Operational Control (BCA/OPCONs) to ensure Continuity of Operations (COOP) in the event of a BCA outage. The Common Submarine Radio Room (CSRR) integrates Commercial Off The Shelf (COTS) and Government Off The Shelf (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 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 provide a communications approach in support of the Joint Operational Architecture (JOA) for time-critical Emergency Action Messages (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 for a viable long-term EAM dissemination solution (NC3 LTS) 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. Low Band Universal Communications System (LBUCS) provides operational capability, through the Very Low Frequency architecture, to insure 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 Submarine Enhanced Emergency Alert System (SEEAS) replaces the Army-Navy/BST-1 (AN/BST-1) transmitter buoy used to communicate “in extremis" messages to the Fleet Commander from an SSBN on patrol that had been rendered incapable of performing its mission either by hostile action or by a casualty.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications

(U) B. Accomplishments/Planned Program

	FY 06	FY 07	FY 08	FY 09
Low Band Universal Communication System (LBUCS)	4.014	3.639	4.841	5.622
RDT&E Articles Quantity				

FY06: Developed transmit and receive system requrements focusing on portability.
FY07: Complete requirement definition and develop all JCIDs documentation. Complete Milestone B.
FY08: Begin development of prototype transmit terminal for testing. Complete DT/OT of transmit terminal. Complete milestone C for transmit terminal.
FY09: Complete Development Test/Operational Test (DT/OT) of transmit system deliverable and design prototype receivers.

	FY 06	FY 07	FY 08	FY 09
Submarine Enhanced Emergency Alert System (SEEAS)	1.181			
RDT&E Articles Quantity				

FY06: Designed an emergency alert system and supporting elements replacing the AN/BST-1 (which reaches end of service life by 2010) for SSBNs in accordance with operational requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification

February-07

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications

(U) B. Accomplishments/Planned Program

	FY 06	FY 07	FY 08	FY 09
High Voltage Improvement Program	0.448	0.427	0.410	0.395
RDT&E Articles Quantity				

FY06: Completed investigation into new materials for sustained long term operation in high electromagnetic fields. Began examination of sealed Helix variometers for antenna tuning.
FY07: Continue examination of sealed Helix variometers for antenna tuning. Examination of lightning protection techniques for light weight insulators from rare extremely high voltage positive lightning strikes.
FY08: Complete examination of sealed Helix variometers for antenna tuning. Begin examination of ultra quick cut off devices to prevent overload conditions.
FY09: Complete examination of ultra quick cut off devices to prevent overload conditions. Begin examination of increasing electrically short antenna efficiency by changing the configuration of the radiating element.

	FY 06	FY 07	FY 08	FY 09
Common Submarine Radio Room (CSRR)	0.936	0.943	0.497	0.547
RDT&E Articles Quantity				

FY06t: Completed integration, system certification and operational assessment of SSBN variant of CSRR. Conducted SEAWOLF OPEVAL.
FY07: Complete OPEVAL of SSBN and SSGN variants. Commence modernization development of DMR 6.4 and SHF capability.
FY08: Complete modernization development and testing of DMR and SHF capabilities.
FY09: Support integration of CSRR Increment 2 modernization for new technologies.

	FY 06	FY 07	FY 08	FY 09
Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)	4.031	4.336	3.800	
RDT&E Articles Quantity				

FY06: Continued SCAP and conduct CEP and strategic connectivity threats, and perform analysis. Extended analysis covers Very Low Frequency (VLF) shore connectivity paths and MILSTAR monitoring. Additional monitoring and analysis is required for the NOVA/Hybrid EAM delivery system to establish a baseline and verify performance parameters.
FY07: Continuation of efforts Prerequisite for developing requirement set for NC3 Long Term Solution.
FY08: Continuation of efforts. Implement monitoring for NC3 Long Term Solution to facilitate developmental and operational testing.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications

(U) B. Accomplishments/Planned Program

	FY 06	FY 07	FY 08	FY 09
Concept Development/Systems Planning	0.912	0.891	1.648	1.561
RDT&E Articles Quantity				

FY06: Investigated codes and modulation schemes necessary to conduct throughput and coverage analysis, performance testing and evaluation. Completed the Joint/Allied Network Enabled Operation (NEO) architecture design.
FY07: Conduct testing, data collection and analysis necessary to optimize bandwidth use. Utilize the data to develop employment CONOPS to maximize operational benefit. Demonstrate Joint/Allied NEO in an operational environment.
FY08: Demonstrate an optimize bandwidth algorithm in a laboratory environment. Begin to integrate Joint/Allied NEO with other FORCEnet applications.
FY09: Demonstrate an optimize bandwidth algorithm in an operational environment. Complete the integration of Joint/Allied NEO with other FORCEnet applications.

	FY 06	FY 07	FY 08	FY 09
Nuclear Command, Control Communications Long Term Solution (NC3 LTS)	4.214	1.508	2.168	1.589
RDT&E Articles Quantity				

FY06: Continued life extension actions identified in the end-to-end assessment and developed Joint Capabilities Integration and Development System (JCIDS) documentation.
FY07: Develop Analysis of Alternatives and begin the capabilities development document and system performance specification.
FY08: Begin development of prototypes and demonstration in support of MS C.
FY09: Complete prototyping and demonstration including developmental test and evaluation

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February-07**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3107 Submarine Broadcast Support	2.132	0.663	4.169	6.74	10.103	15.425	22.567	25.338

(U) D. ACQUISITION STRATEGY: *

The Common Submarine Radio Room (CSRR) will integrate Chief of Naval Operations (CNO) N6 communication programs into the submarine radio rooms. The program has been designated an ACAT II 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, Ship, Submersible, Nuclear (SSN)) will require design integration and operational testing. The Common Submarine Radio Room (CSRR) program has completed Milestone C 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 Space and Naval Warfare (SPAWAR) System Center, Charleston.

Low Band Universal Communication System (LBUCS) will maximize the use of Commercial Off The Shelf (COTS) and Non-Developmental Items (NDI) hardware and software. Contract award will be based on full and open competition.

The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS) will develop an approach to use Commercial Off-The-Shelf (COTS) and Non-Developmental Item (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 Milestone (MS)-B in 4th QTR FY08.

Submarine Enhanced Emergency Alert System (SEEAS) is a project levying off technology developed from other programs and maximizes the use of COTS and NDI.

(U) E. Major Performers:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February-07**

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

PROGRAM ELEMENT: PE: 0204163N TITLE: FLE

PROJECT NUMBER AND NAME: 1083 Shore to Ship Communications

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	10.258	1.089	11/06	1.075	11/07	1.085	11/08	Continuing	Continuing	0.000
Ancillary Hardware Development	Various	Various	0.603	0.288	11/06	0.275	11/07	0.180	11/08	Continuing	Continuing	0.000
Systems Engineering	CPFF	APL/JHU, Baltimore, MD	23.568	0.997	12/06	4.710	11/07	0.270	11/08	Continuing	Continuing	0.000
Systems Engineering	WR	SSC San Diego, CA	39.730	1.857	11/06	1.766	11/07	0.520	11/08	Continuing	Continuing	0.000
Systems Engineering	WR	Misc. Labs, NUWC, RI	10.973	0.800	11/06	0.702	11/07	0.498	11/08	Continuing	Continuing	0.000
Systems Engineering	WR	US Army, Monmouth, NJ	5.582	0.525	11/06	0.465	11/07	0.525	11/08	Continuing	Continuing	0.000
Systems Engineering	Various	Various	16.154									0.000
Subtotal Product Development			**106.868**	**5.556**		**8.993**		**3.078**		**Continuing**	**Continuing**	**0.000**

Remarks:

Development Support			2.671	1.695	11/06	1.160	11/07	1.211	11/08			0.000
Software Development	WR	SSC San Diego, CA	9.064							Continuing	Continuing	0.000
Software Development	TBD	TBD						1.220		Continuing	Continuing	0.000
Training Development												0.000
Integrated Logistics Support			0.545	0.215	11/06	0.200	11/07	0.215	11/08			0.000
Acquisition/Program Development			0.462	0.261	11/06		11/07	0.261	11/08	Continuing	Continuing	0.000
Technical Data			2.822							Continuing	Continuing	0.000
GFE												0.000
Subtotal Support			**15.564**	**2.171**		**1.360**		**2.907**		**Continuing**	**Continuing**	**0.000**

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February-07**						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**				PROGRAM ELEMENT PE: 0204163N TITLE: FLE		PROJECT NUMBER AND NAME 1083 Shore to Ship Communications								
Cost Categories		Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 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 Evaluation		CPFF	APL/JHU, Baltimore, MD		15.522	2.346	12/06	1.511	12/07	2.612	12/08	Continuing	Continuing	0.000
Systems Testing		Various	Various		6.066	0.993	12/06	0.900	12/07	0.448	12/08	Continuing	Continuing	0.000
Tooling														0.000
GFE														0.000
Subtotal T&E					**21.588**	**3.339**		**2.411**		**3.060**		**Continuing**	**Continuing**	**0.000**

Remarks:

Contractor Engineering Support	WR	US Army, Monmouth, NJ		1.194	0.125	12/06	0.100	12/07	0.125	12/08	Continuing	Continuing	0.000
Government Engineering Support	WR	Various		0.845	0.288	12/06	0.275	12/07	0.342	12/08	Continuing	Continuing	0.000
Program Management Support	Various	Various		4.592	0.215	12/06	0.175	12/07	0.152	12/08	Continuing	Continuing	0.000
Travel				0.050	0.050		0.050		0.050		Continuing	Continuing	0.000
Subtotal Management				**6.681**	**0.678**		**0.600**		**0.669**		**Continuing**	**Continuing**	**0.000**

Remarks:

Total Cost				**150.701**	**11.744**		**13.364**		**9.714**		**Continuing**	**Continuing**	**0.000**

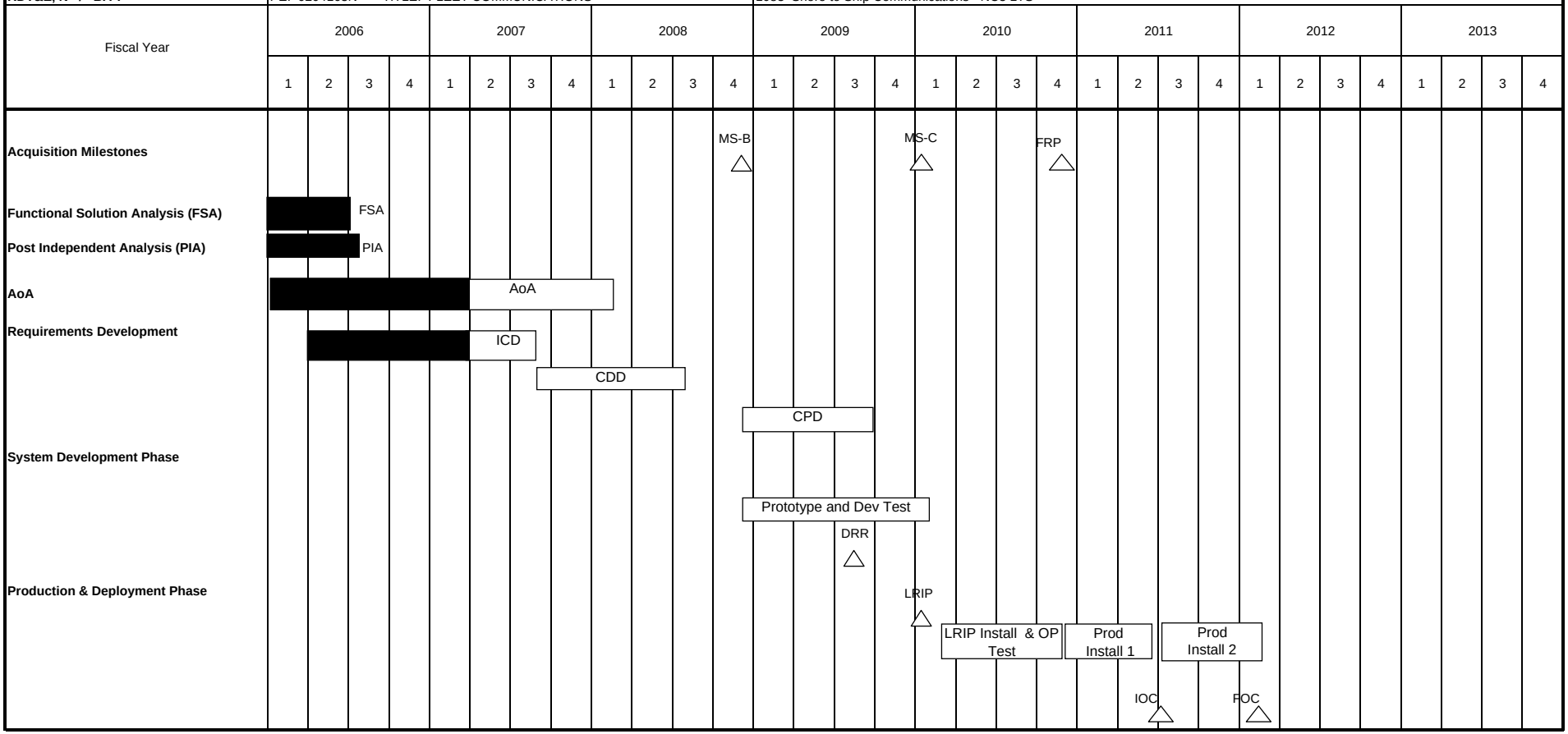
Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
Nuclear Command, Control, Communications Systems - Long Term Solution

DATE: **February-07**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications - NC3 LTS



Terminology taken from DoDI 5000.2, dtd 12 May 2003.

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: February-07			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET COMMUNICATIONS			PROJECT NUMBER AND NAME 1083 Shore to Ship Communications - NC3 LTS				
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone B (MS-B)			4Q					
Milestone C (MS-C)					1Q			
Functional Solution Analysis (FSA)	1Q-3Q							
Post Independent Analysis (PIA)	1Q-3Q							
Initial Capabilities Document (ICD)	2Q-4Q	1Q-3Q						
AoA	1Q-4Q	1Q-4Q	1Q					
Requirements Development								
CDD		3Q-4Q	1Q-3Q					
CPD			4Q	1Q-3Q				
System Development Phase								
Prototype and Dev Test			4Q	1Q-4Q	1Q			
DRR				3Q				
Production & Deployment Phase								
LRIP					1Q (LRIP)			
Installation					1Q-2Q	1Q-2Q		
OT&E					4Q			
IOC						3Q		
FOC							1Q	

CLASSIFICATION:

EXHIBIT R4, Schedule Profile — **Submarine Enhanced Emergency Alert System - SEEAS** — DATE: **February-07**

APPROPRIATION/BUDGET AC	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications - SEEAS

Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013			
	Produ 4Q																															
	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
Milestones																																
Contract Award																																
Prototype Delivery				▲																												
System Development (e.g., Radar System dev.)																																
Firmware Development - Test Set Assembly		▲		▲																												
Test & Evaluation Milestones																																
Operational Test				▲																												
Production Milestones																																
LRIP I																																
FRP (AN/BST-1 Buoy Unit)																																
Equipment Deliveries																																

CLASSIFICATION:

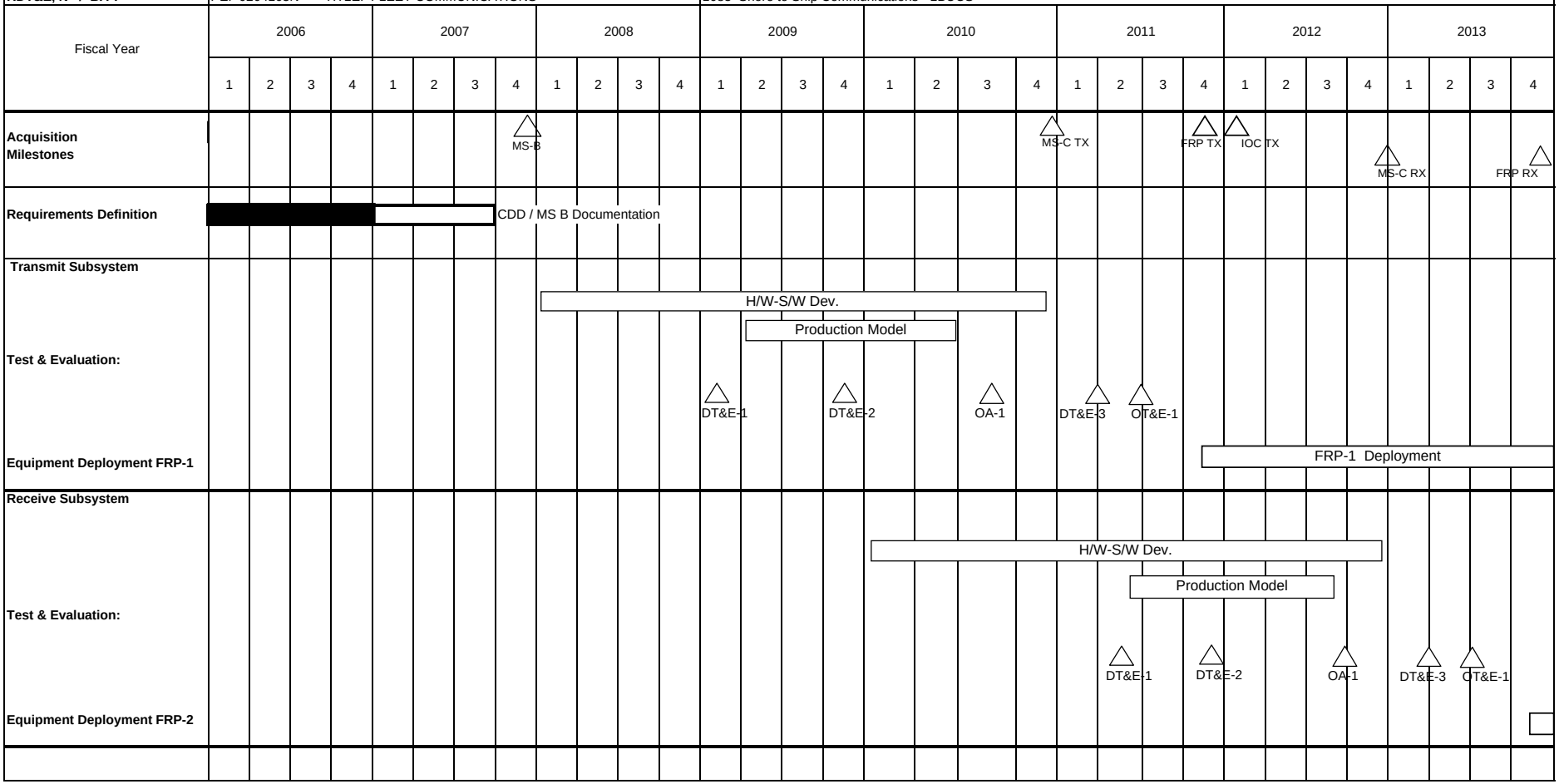
Exhibit R-4a, Schedule Detail						DATE: February-07		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET COMMUNICATIONS				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications - SEEAS			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Production - LRIP I (Prototype Delivery)	4Q							
Firmware Development - Test Set Assembly	2Q-4Q							
Operational Testing	4Q							

CLASSIFICATION:

EXHIBIT R4, Schedule Profile
Low Band Universal Communication System

DATE: **February-07**

APPROPRIATION/BUDGET ACTI	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	PE: 0204163N TITLE: FLEET COMMUNICATIONS	1083 Shore to Ship Communications - LBUCS



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: February-07		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, BA-7**	PROGRAM ELEMENT PE: 0204163N TITLE: FLEET COMMUNICATIONS				PROJECT NUMBER AND NAME 1083 Shore to Ship Communications - LBUCS			
Schedule Profile - Low Band Universal Comm System	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Requirements Definition	1Q-4Q							
Milestone B		4Q						
Transmit Subsystem Development:								
H/W / S/W Development			1Q-4Q	1Q-4Q	1Q-4Q			
Production Model				2Q-4Q	1Q-2Q			
Test & Evaluation (DT&E-1)				1Q				
Test & Evaluation (DT&E-2)				4Q				
Test & Evaluation (OA-1)					3Q			
Test & Evaluation (DT&E-3)						2Q		
Test & Evaluation (OT&E-1)						3Q		
Milestone C - Transmit					4Q			
FRP - Transmit Decision						4Q		
IOC Transmit							1Q	
Receive Subsystem Development:								
H/W / S/W Development					1Q-4Q	1Q-4Q	1Q-4Q	
Production Model						2Q-4Q	1Q-3Q	
Test & Evaluation (DT&E-1)						2Q		
Test & Evaluation (DT&E-2)						4Q		
Test & Evaluation (OA-1)							3Q	
Test & Evaluation (DT&E-3)								2Q
Test & Evaluation (OT&E-1)								3Q
Milestone C - Receive							4Q	
FRP - Receive Decision								4Q