CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE February 2008	
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**			R-1 ITEM NOMENCLATURE **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	105.706	118.713	143.453	148.028	135.836	124.383	111.309
0219 / Sub Sonar Improvement (ENG)	56.139	60.771	67.894	71.098	78.085	76.854	78.351
0742 / SUB INTEGRATED ANT SYS	17.490	34.009	58.143	53.843	37.152	26.837	22.072
0775 / Submarine Supt Equip Prog	1.693	1.379	1.417	1.454	1.487	1.517	1.545
1411 / SUBM TACT COMM SYS	15.982	16.194	15.999	21.633	19.112	19.175	9.341
9999 / CONGRESSIONAL ADDS	14.402	6.360	0.000	0.000	0.000	0.000	0.000

A. MISSION DESCRIPTION:

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (EWS) techniques, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for submarine EWS to be operationally effective in the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime Protection, and Joint Strike.

The Submarine Sonar Improvement Program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21, TRIDENT and SSGN Class Submarines to maintain clear acoustic, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement.

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2007	FY 2008	FY 2009
FY2008 President's Budget	109.204	114.789	103.482
FY2009 President's Budget	105.706	118.713	143.453
Total Adjustments	-3.498	3.924	39.971
Summary of Adjustments			
Congressional program reductions	-0.342	-0.040	
Congressional increases		6.400	
Program reductions	-3.156	-2.436	
Program increases		3.924	39.971
Reprogrammings			
SubTotal	-3.498	3.924	39.971

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	56.139	60.771	67.894	71.098	78.085	76.854	78.351
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21, SSGN and TRIDENT Class Submarines to maintain clear acoustical, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. Acoustics Rapid COTS Insertion (A-RCI) is a multi-phased, evolutionary development effort geared toward addressing Acoustic Superiority issues through the rapid introduction of interim development products applicable to SSN 688, 688I Flight, SSN21, SSGN, VIRGINIA, and SSBN 726 Class Submarines. A-RCI Phases I and II introduce towed array processing improvements; A-RCI Phase III introduces spherical array processing improvements, and AN/BSY-1 High Frequency Upgrade introduce high frequency array processing improvements for SSN 688I, SSGN, VIRGINIA and Seawolf Class. As part of CNO N872's plan to maintain acoustic superiority for In-Service Submarines a joint cooperative effort with PEO IWS-5 to deliver annual Advanced Processing Builds (APBs) to prevent obsolescence and deliver capability improvements is ongoing. The capabilities in the APBs will be integrated as part of A-RCI certified systems. This effort, known as the N872 Business Plan funds the APB integration efforts with the Multi-Purpose Processor as well as the AN/BQQ-10 Sonar system beginning in FY02. This budget submit also reflects development of the Total Ship Monitoring System and Active Intercept and Ranging capabilities to be introduced into the Fleet.

Towed system's development efforts provide increased operational capabilities and reliability improvements to maintain a clear acoustical, tactical, and operational superiority over submarine and surface combatants. These efforts include development of a Fiber Optic Thinline Towed Array, (TB-33) for increased reliability, the Next Generation Fatline Towed Array (TB-34) which provide improved Littoral Operational capability and the Low Cost Conformal Array, an HF array that provides enhanced situational awareness.

AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines.

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**	

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	14.150	14.106	14.562
RDT&E Articles Quantity	0	0	0

APB Productionization

FY07 through FY09 - Continue Advanced Processing Build (APB) Sea Testing, Integration and Certification. This effort is primarily the transition of APB software from development to A-RCI for integration and test, and formal certification.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	34.263	28.765	32.298
RDT&E Articles Quantity	0	0	0

Integration and Testing.

Awarded new contracts to Lockheed Martin and General Dynamics in FY04 for continued A-RCI and MPP development, integration and test.

FY07 through FY09 - Continued Integration and testing to support the introduction of Advanced Processing Builds to be installed on SSN 688I, SSN 688, SSBN 730, SSN 21, and SSGN 726 and VA Class.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000
RDT&E Articles Quantity	0	0	0

BQS-15A EC20

Merges the BQS-15 EC-18 array with A-RCI processing displays.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	2.000	2.000	2.200
RDT&E Articles Quantity	0	0	0

HF Precision Imaging Active Sonar

Begin development efforts for HF Precision Imaging Active Sonar in FY07. The HF Precision Imaging Active Sonar provides improvements for under-ice capability and mine detection. This will assist the submarine in maneuvering near the bottom in medium and littoral waters, as well as the marginal ice zone and ice pack regions.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	10.500	3.000
RDT&E Articles Quantity	0	0	0

Low Cost Conformal Array LCCA is a low cost HF array that provides enhanced situational awareness, providing the capability to extend passive detection range in littoral

environments against quiet threats and multi-path ranging beyond first bottom bounce capability. The program is being developed by PEO-IWS-5 and is currently scheduled to transition in FY08. EDM procurements, fabrication and assembly will begin in FY08. EDM Deliveries will be accepted in FY09. ARCI Integration, TECHEVAL and OPEVAL testing is planned for FY09.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000
RDT&E Articles Quantity	0	0	0

The development of the Next Generation Fatline Towed Array provides improvement in littoral water operations and increased frequency coverage.
Began development efforts for the Next Generation Fatline Towed Array in FY04, completed Design Readiness Review in FY05 and completed development in FY06.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	5.726	5.400	2.066
RDT&E Articles Quantity	0	0	0

Affordable Towed Array Technology (ATAT) development provides more affordable and reliable thinline arrays using fiber optic technology and eliminating "wet end" electronics.
Program began development in FY04, completed Critical Design Review in FY06 and has transitioned to Production Representative Unit (PRU) Fabrication.

FY07 - Begin reliability design testing, in support of LRIP decision.
FY08 - Continue development of ATAT and begin operational testing in support of MS C decision.
FY09 - Complete development and transition to MS C full rate produciton.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	0.000	13.768
RDT&E Articles Quantity	0	0	0

Twin Line Thin Line Development - Providing twinline array capability improves long range passive deteciton and wide area search capability.

FY09- Transition advanced development from PEO-IWS-5 to PMS401 and begin final development. Projected IOC in FY15.

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
OPN BLI 214700 SSN Acoustics	218.074	235.979	212.037	214.671	220.979	218.117	230.999	CONT	
OPN BLI 214705 SSN Acoustics Installation	53.621	74.609	72.116	64.347	42.883	50.245	51.521	CONT	
Total	271.695	310.588	284.153	279.018	263.862	268.362	282.520	CONT	

D. ACQUISITION STRATEGY:

Acoustic Systems:

A-RCI utilizes an open architecture and Commercial Off-the-Shelf products in support of new and upgraded sonar systems. A follow-on development and production sole source cost plus award fee contract was awarded to Lockheed Martin Federal Systems and General Dynamics, Advanced Information Systems in December 2003. Program Review with Milestone Decision Authority was conducted in October 2003 granting approval for the FY04 production option. MS III authority for A-RCI was received in February 2004.

Thinline Arrays:

Towed Systems is the development of a highly reliable and more affordable Fiber Optic Thinline variant towed array which uses fiber optic sensor technology for data collection and moves all outboard electronics from the array to inboard the submarine where they can be easily maintained. Cost savings in array production will be gained by using automated production techniques and significantly reducing or eliminating the "hand touch" labor common to today 's towed array production methods because of the number of different electronics that must be wired together to achieve the acoustics capabilities necessary to meet today's and tomorrow threats. This development is being accomplished under a Phase III SBIR. CDR was completed in FY06 and the program has transitioned to fabrication of Production Representative Units. Contract award for follow-on development awarded in 1st quarter FY07.

Fatline Arrays:

In FY04 Towed Systems awarded multiple competitive contracts for the development of a Fatline Towed Array which will provide better littoral operations and ranging. Development is complete and this program has now transitioned to initial production. Results of operational testing are expected in FY08.

Hull Mounted Arrays:

The Low Cost Conformal Array (LCCA) will transition from ASTO in FY08 with a competitive contract being awarded for the EDM development. EDM procurements, fabrication and assembly will begin in FY08. EDM Deliveries will be accepted in FY09. ARCI Integration, TECHEVAL and OPEVAL testing is planned for FY09.

E. MAJOR PERFORMERS:

Lockheed Martin Corporation, Naval Electronics and Surveillance Systems-Undersea Systems; Manassas, Virginia - Provides primary hardware development, software integration and systems engineering support for Advanced Processor Builds for SSN 688, 688 I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.

General Dynamics, Advanced Information Systems; Fairfax, Virginia - Provides primary software development for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**

Naval Undersea Warfare Center, Newport, Rhode Island - Provides systems engineering support for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Work Requests to be issued October each fiscal year.

Chesapeake Science Corporation, Millersville, Maryland: Provides primary hardware development, software integration and systems engineering support for the Affordable Towed Array Technology Initiatives. Contract awards projected for October each fiscal year.

CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Primary Hardware Development	SS/CPIF	LMC, Manassas, VA	156.902	18.450	DEC-06	14.573	DEC-07	16.500	DEC-08	CONT	CONT	0.000
Primary Hardware Development	Various	Chesapeake Sciences, MD	23.082	4.844	DEC-06	3.700	DEC-07	1.724	DEC-08	CONT	CONT	0.000
Ancillary Hardware Development	SS/CP	ARL University of Texas, TX	7.458	2.800	MAY-07	3.800	FEB-08	4.000	FEB-09	CONT	CONT	0.000
Systems Engineering	SS/CP	John Hopkins APL, MD	9.931	3.026	DEC-06	3.785	DEC-07	3.800	DEC-08	CONT	CONT	0.000
Systems Engineering	SS/CPAF	Lockheed Eagan, MN	7.985	1.547	MAY-07	2.500	JAN-08	2.500	JAN-09	CONT	CONT	0.000
Primary Hardware Development	SS/CPAF	Progeny Systems, VA	11.581	6.400	FEB-07	2.200	JAN-08	2.200	JAN-09	CONT	CONT	0.000
Primary Hardware Development	TBD	TBD	0.000	0.000		10.500	FEB-08	3.000	DEC-08	CONT	CONT	0.000
Systems Engineering	WR	NUWC, Newport, RI	109.022	6.600	DEC-06	5.300	DEC-07	7.400	DEC-08	CONT	CONT	0.000
Systems Engineering	WR	NSWC, Carderock, MD	5.691	2.154	DEC-06	1.145	DEC-07	1.500	DEC-08	CONT	CONT	0.000
Systems Engineering	WR	NSWC, Crane IN	0.234	0.269	DEC-06	0.000		0.000		0.000	0.503	0.000
Systems Engineering	WR	Naval Research Lab, DC	0.822	0.240	DEC-06	0.280	DEC-07	0.300	DEC-08	0.000	1.642	0.000
Primary hardware Development	TBD	TBD	0.000	0.000		0.000		11.768	JAN-09	CONT	CONT	0.000
Hardware/Software Development	Various	SBIR (Various)	1.478	0.125	JUN-07	0.125	JUN-08	0.013	JUN-09	CONT	CONT	0.000
Subtotal Product Development			**334.186**	**46.455**		**47.908**		**54.705**		**CONT**	**CONT**	**0.000**
Remarks: Program Review 09 program increase of $14.2M in FY09 to support transition of Twin Line thin Line Towed Array development from PEO-IWS-5 to PMS401.												
Primary Software Development	SS/CPAF	General Dynamics, AIS	124.726	4.000	DEC-06	4.800	DEC-07	5.200	DEC-08	CONT	CONT	0.000
Primary Software Development	SS/CPFF	Sedna Digital, VA	0.000	3.440	JAN-07	5.753	DEC-07	5.629	DEC-08	CONT	CONT	0.000
Subtotal Support Costs			**124.726**	**7.440**		**10.553**		**10.829**		**CONT**	**CONT**	**0.000**
Remarks:												
Operational Test and Evaluation	WR	OPTEVFOR	2.519	1.244	DEC-06	1.350	DEC-07	1.400	DEC-08	CONT	CONT	0.000
Subtotal Test and Evaluation			**2.519**	**1.244**		**1.350**		**1.400**		**CONT**	**CONT**	**0.000**
Remarks:												
Management Support Services	C/CP	EG&G Technical Services	4.986	0.800	FEB-07	0.810	FEB-08	0.810	FEB-09	CONT	CONT	0.000
Travel	WR	NAVSEA	0.650	0.200	NOV-06	0.150	NOV-07	0.150	NOV-08	CONT	CONT	0.000

CLASSIFICATION:	UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Subtotal Management Services			**5.636**	**1.000**		**0.960**		**0.960**		**CONT**	**CONT**	**0.000**
Remarks:												
Total Cost			**467.067**	**56.139**		**60.771**		**67.894**		**CONT**	**CONT**	**0.000**

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219/Sub Sonar Improvement (ENG)**

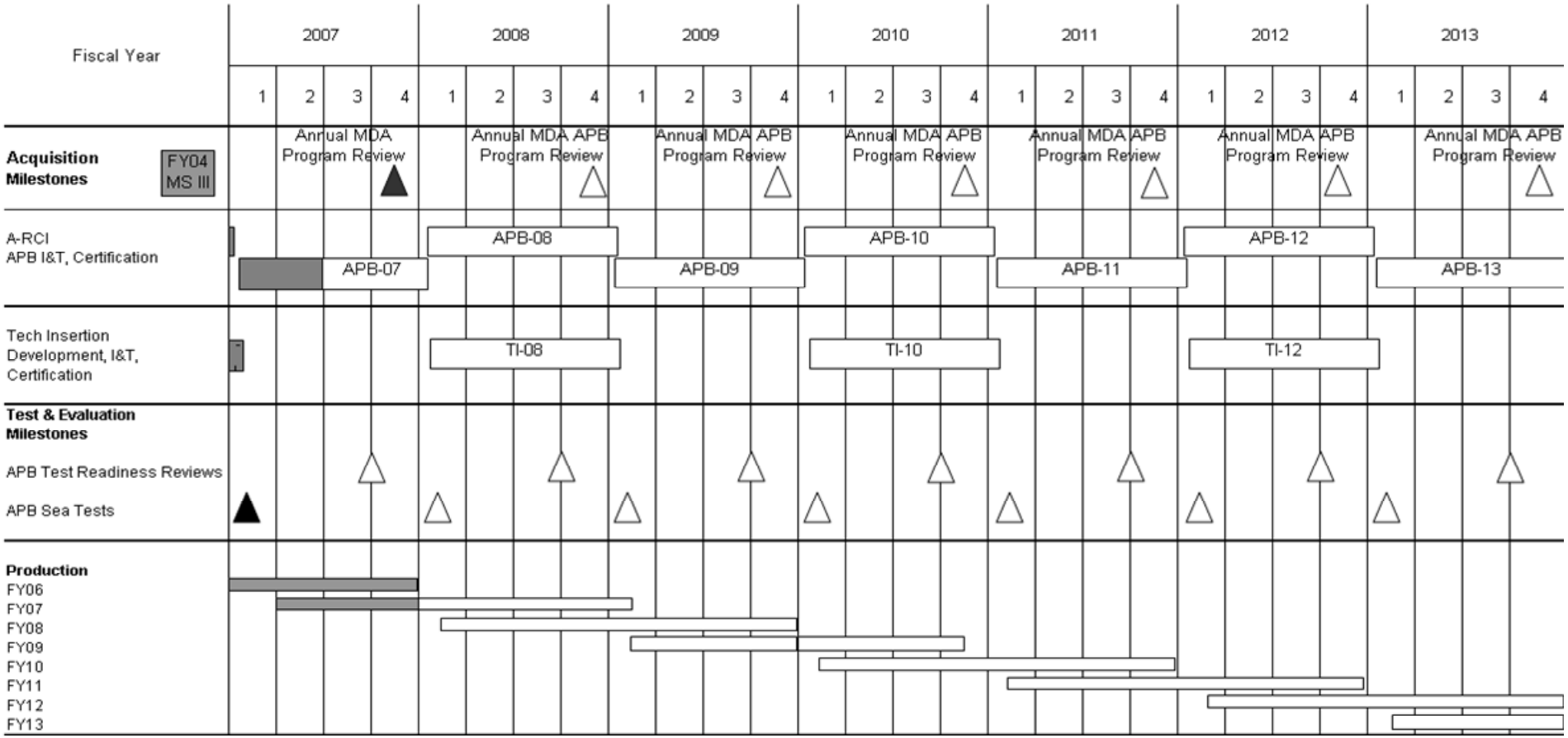

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EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219B/R-4 LCCA**

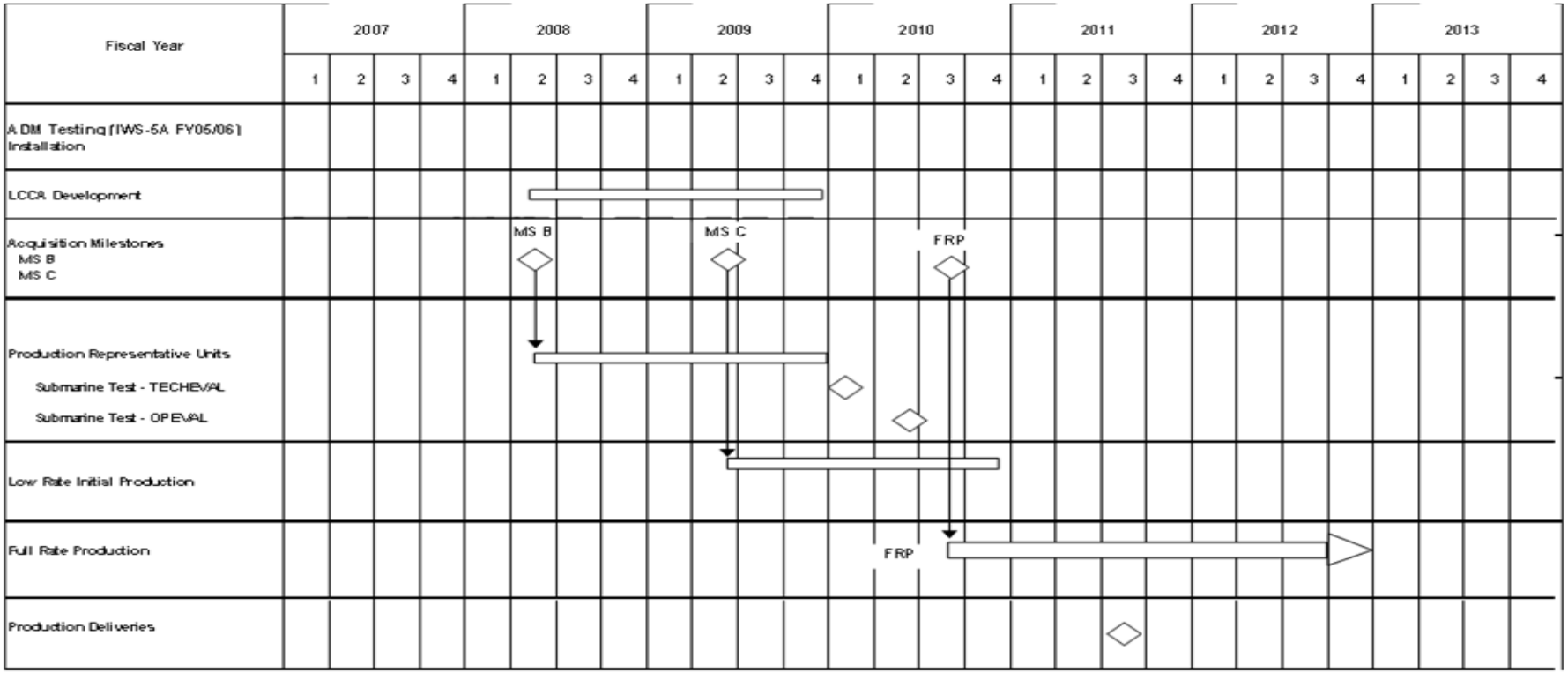

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EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219C/R-4 TB-33**

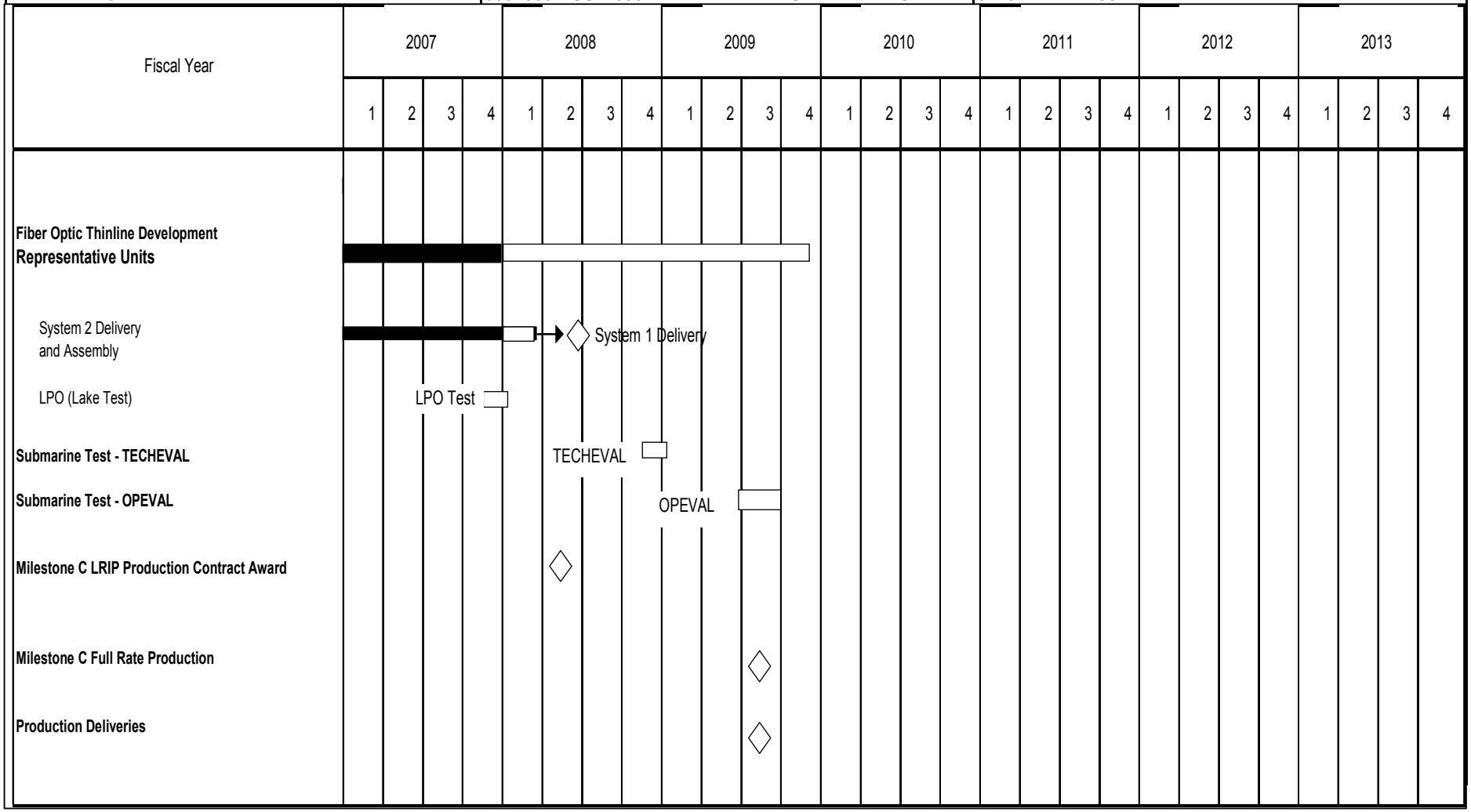

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EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219D/R-4 TB-34**

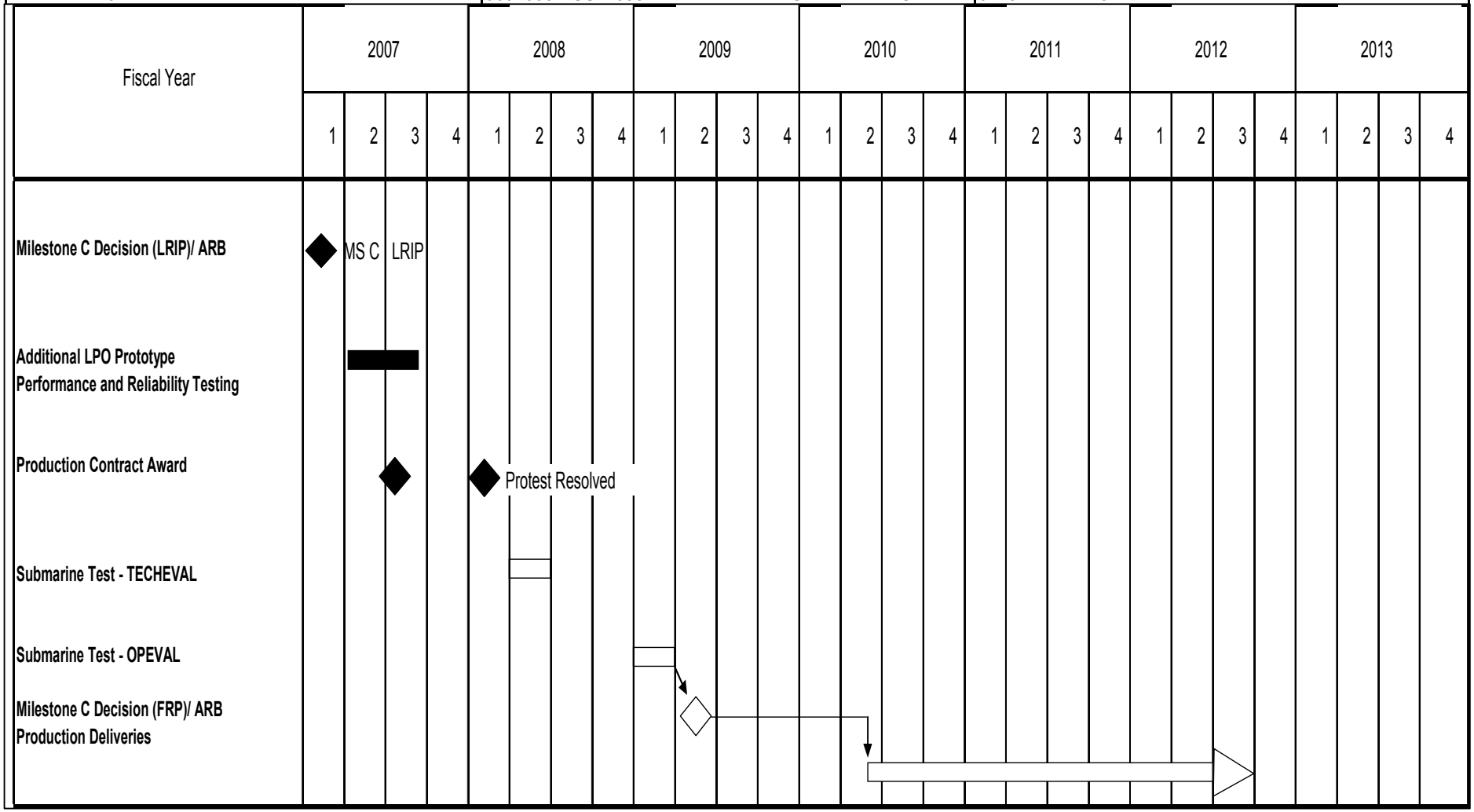

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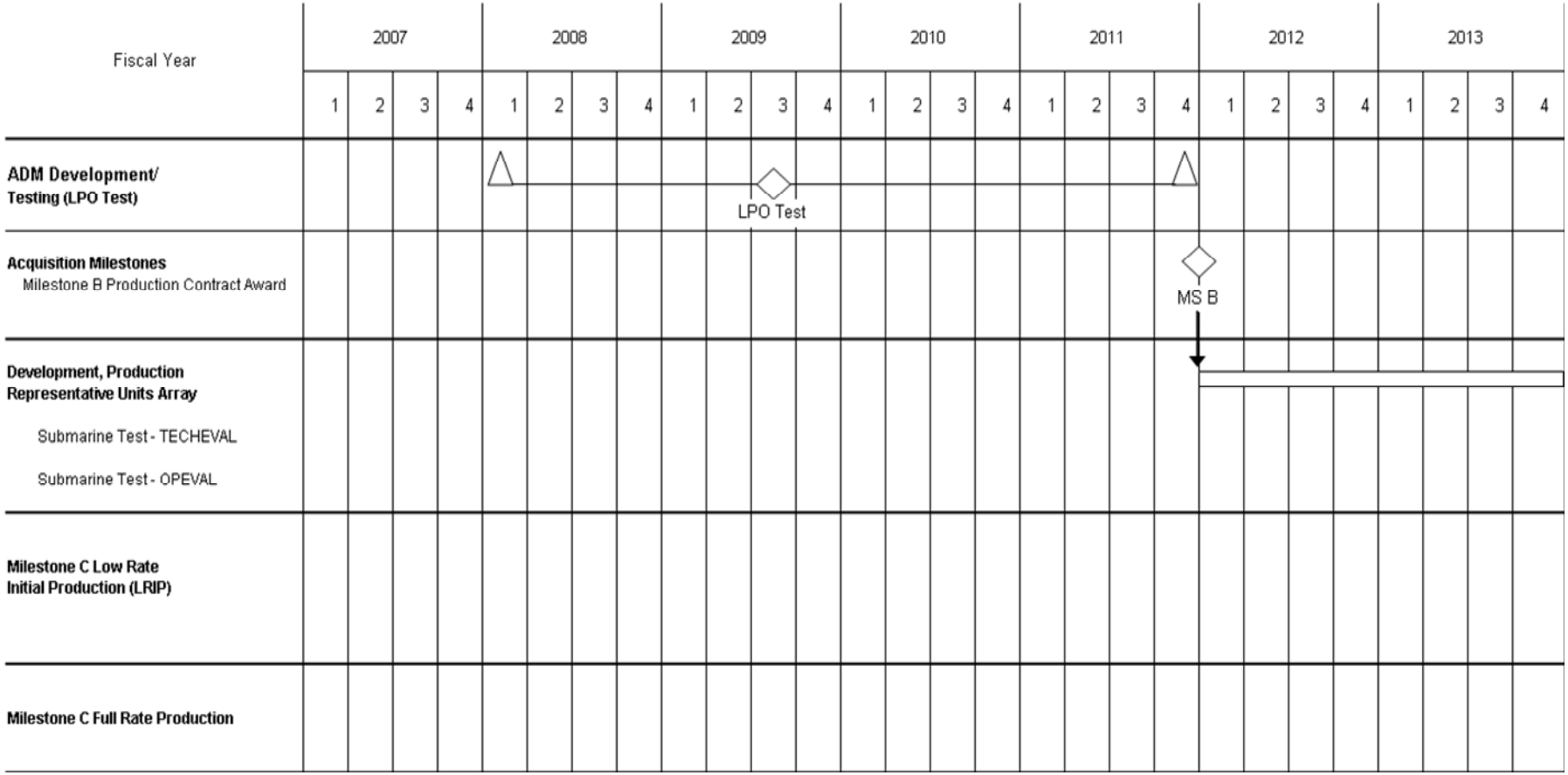
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0219E/R-4 TLTL**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219A/R-4 Acoustics**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone II (MS II) FY95							
A-RCI APB Integration	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Annual Program Review	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Milestone C (MS C) FY04							
Production Awards	2Q	2Q	2Q	2Q	2Q	2Q	2Q
APB Test Readiness Review (TRR)	1Q,3Q,4Q	1Q,3Q,4Q	1Q,3Q,4Q	1Q,3Q,4Q	1Q,3Q,4Q	1Q,3Q,4Q	1Q,3Q,4Q
APB Sea Tests	3Q	3Q	3Q	3Q	3Q	3Q	3Q
APB Deliveries	1Q	1Q	1Q	1Q	1Q	1Q	1Q
Tech Insertions		1Q-4Q		1Q-4Q		1Q-4Q	
Production	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219B/R-4 LCCA**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ADM Testing (IWS5A) FY05/06 Installation							
LCCA Development FY08-FY09		2Q	4Q				
Acquisition Milestone B (MS B) Start		2Q					
Acquisition Milestone C			2Q				
Acquisition Milestone B (MS B) Complete			4Q				
Production Representative Units Delivery		2Q	4Q				
Submarine Test - TECHEVAL				1Q			
Submarine Test - OPEVAL				2Q			
Low Rate Initial Production			2Q-	4Q-			
Full Rate Production				3Q			
Production Deliveries					3Q		

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APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219C/R-4 TB-33**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Fiber Optic Thinline Development FY02-FY09							
Detailed Design CDR FY06							
System 1 Delivery		2Q					
LPO Test (Lake Test)	4Q						
Submarine Test - TECHEVAL		4Q					
Submarine Test - OPEVAL			3Q				
MS C LRIP Production Contract Award		2Q					
MS C Full Rate Production			3Q				
Production Deliveries			3Q				

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219D/R-4 TB-34**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Next Generation Fatline Array Development FY04-FY06							
Multiple Development Contracts Awarded FY05							
Prototype Delivery FY06							
Additional LPO Prototype Performance and Reliability Testing	2Q/3Q						
Production Contract Award	2Q/3Q						
Protests Resolved		1Q					
Submarine Test - TECHEVAL		2Q					
Submarine Test - OPEVAL			1Q				
Milestone C Decision (FRP) / ARB Production Deliveries				2Q			

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219E/R-4 TLTL**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ADM Development		1Q-			4Q		
LPO Test			3Q				
Milestone B Production Contract Award					4Q		
TECHEVAL 2Q FY14							
OPEVAL 3Q FY14							
Milestone C Low Rate Production (LRIP) FY14							
Milestone C Full Rate Production FY14							

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0219D/R-4 TB-34**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Next Generation Flatline Array Development FY04-FY06							
Multiple Development Contracts Awarded FY05							
Prototype Delivery FY06							
Performance and Reliability Testing (Lake Test) FY07	2Q/3Q						
Production Award Contract	1Q						
Protest - 2 Contracts on Hold	2Q/3Q						
Submarine Test - TECHEVAL		2Q					
Submarine Test - OPEVAL			1Q				
Production Deliveries				2Q			

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	17.490	34.009	58.143	53.843	37.152	26.837	22.072
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Submarine Integrated Antenna System (SIAS) project (0742) provides for the development and testing of submarine antennas designed to meet emerging submarine communications requirements of: (a) Improved frequency coverage and data rate capabilities of submarine antennas and their interface to the External Communications System (ECS), (b) Improved submarine antenna performance and data rate while the submarine is operating at speed and depth, (c) Antenna compatibility with new waveforms and receiver equipment, (d) Improved stealth capability of existing and future antennas and (e) Improved antenna design to reduce Total Ownership Cost. This project funds research and development for submarine antennas including (1) Pre-Planned Product Improvement (P3I) efforts to existing antennas including Outboard Electronics-538/BRC (OE-538/BRC) Multi-Function Antenna, (2) OE-562 Submarine, High Data Rate (SubHDR) system development of X-Band capabilities, (3) Development of new antenna systems including Advanced High Data Rate Antenna (AdvHDR) and (4) Communication at Speed and Depth (CSD) design efforts. These efforts will provide Ship Submersible Nuclear (SSN), Ship Submersible Ballistic Nuclear (SSBN) and Ship Submersible Guided Nuclear (SSGN) platforms with an improved communications capability while operating at speed and depth thus enhancing operational flexibility and maintaining stealth in littoral mission applications.

U) JUSTIFICATION FOR BUDGET ACTIVITY:

This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
Antenna Transition Engineering	4.534	4.301	4.823
RDT&E Articles Quantity	0	0	0

FY07: Provided analysis for emerging requirements and satellite communications database/link for other development programs (i.e. Mobil User Objector System (MUOS), Wideband Gapfiller Satellite (WGS), Wideband Network Waveform (WNW), Radio Frequency Distribution Antenna Control System (RFDACS), OE-538 and OE-513 ($1.126). Continued Planned Product Improvement (P3I) investigations and development efforts for legacy antenna systems ($1.682). Continued concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications ($1.726).

FY08: Continue to provide emerging requirements and satellite communications database/line analysis for other development programs (i.e. MUOS, Intra-Battle Group Wideband Network (IBGWN), WGS, Advanced Extremely High Frequency (EHF), and WNW ($1.081). Continue P3I investigation and development efforts for the legacy antenna systems ($0.580). Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications ($1.424). Investigate multiple usage antennas, i.e. antennas that can be used for communications and other purposes such as ESM ($1.216).

FY09: Continue to provide emerging requirements and satellite communications database/link analysis for other development programs i.e. MUOS, IBGWN, WGS, Advanced EHF, and WNW ($1.255). Continue P3I investigation and development efforts for the legacy antenna systems ($0.850). Continue to investigate multiple usage antennas including antennas that can be used for communication and other purposes such as Electronic Surveillance Measures (ESM) ($0.977). Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications; specifically to assess the impact to the sail and hull penetrators on different classes of submarines ($2.058).

	FY 2007	FY 2008	FY 2009
OE-538	0.000	4.426	6.884
RDT&E Articles Quantity	0	0	0

FY08: Prepare required acquisition documents and initiate system design for Increment 2 hardware and software to support MUOS, WNW and Iridium incorporation into the OE-538 antenna ($3.377). Commence system engineering to support integration of MUOS/WNW/Iridium into the OE-538 antenna ($1.447).

FY09: Continue system design for Increment 2 hardware/software ($1.000). Commence integration and system testing of Increment 2 system ($3.818). Continue system engineering including development of documentation and Integrated Logistics Support (ILS) products for Increment 2 ($2.066).

	FY 2007	FY 2008	FY 2009
SubHDR P3I	3.100	2.093	8.329
RDT&E Articles Quantity	0	0	0

FY07: Completed SHF Follow-On Terminal (FOT) development/test ($1.258). Completed development of Global Broadcast System (GBS) enhancements and combined Engineering Change

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**

Proposal (ECP) for GBS and Transmit/Receive (Tx/Rx) development efforts ($0.868). Completed development of SHF Tx/Rx enhancements and contract start up for combined ECP for the GBS and Tx/Rx development efforts and initial Engineering Development Model (EDM) kits ($0.785). Completed development of Traveling Wave Tube (TWT) enhancement kits for SubHDR ($0.189).

FY08: Commence concept development and System Engineering for SubHDR antenna enhancement efforts required for compatibility with grade-A shock requirements ($1.474). Commence program planning, ECP/Integrated Logistic System (ILS) documentation and test support development of Grade-A shock requirements ($0.619).

FY09: Continue system engineering for the development efforts to meet grade-A shock requirement ($5.525). Commence development of grade-A shock improvement kits ($1.930). Continue program planning, ECP/ILS documentation development, system integration and Design Verification Test (DVT) procedures ($0.874).

	FY 2007	FY 2008	FY 2009
Advanced HDR	4.872	4.618	14.007
RDT&E Articles Quantity	0	0	0

FY07: Commenced development of systems engineering and detailed specification documentation ($1.130). Generated and released industry Requests For Information (RFI) on technology available to meet the desired performance requirements for AdvHDR. Performed analysis of industry responses ($0.974). Conducted an Analysis of Alternatives (AoA) to determine appropriate technical approach for the development of AdvHDR ($2.768).

FY08: Commence system definition/risk reduction and system development efforts ($2.861). Initiate technology demonstration to prove maturity of system concept ($1.170). Develop system development test documents and procedures ($0.425). Commence Milestone B documentation preparation and development of contract documents for AdvHDR ($0.537).

FY09: Complete design and documentation development for Milestone B and initiate contract start up ($0.975). Complete technology demonstration efforts ($0.950). Continue system development engineering efforts ($1.432). Commence dual vendor system EDM development ($19.750).

	FY 2007	FY 2008	FY 2009
Communications (Comms) at Speed and Depth	4.984	18.571	24.100
RDT&E Articles Quantity	0	0	0

FY07: Continued cost share technology development with Office of Naval Research (ONR) for SeaDeep and Ultra High Frequency (UHF) projects ($0.500). Continued development of acquisition documentation, program management, contract management and systems engineering including the Capability Development Document (CDD) in support of a Milestone B decision ($3.884). Initiated installation documentation for the Recoverable Tethered Optical Fiber (RTOF) system aboard OHIO Class submarine and provide technical oversight and management ($0.600).

FY08: Continue cost share technology development with ONR for SeaDeep project ($2.500). Continue to develop acquisition documentation, program management, contract management and systems engineering oversight in support of a Milestone B decision ($3.600). Award initial development contract for Increment 1 Engineering Development Models (EDMs) ($10.671). Install the RTOF system aboard OHIO Class submarine and provide technical oversight to sea test ($1.800).

FY09: Continue to develop Increment 1 EDMs and test assets for certification ($8.250). Plan for developmental testing and operational assessment (DT/OA) of the EDMs to include updating the Test and Evaluation Master Plan (TEMP) ($0.250). Prepare Ship Alterations (SHIPALTs) in support of the EDM installations ($1.250). Development of

Increment 1 Capabilities Production Document (CPD), update acquisition documentation, program management, contract management and systems engineering documentation in support of Milestone C - Low Rate Initial Production (LRIP) decision ($2.000). Remove RTOF system and restore original capability to the submarine upon completion of sea test ($0.500). Participate in the Sea Eagle Advanced Technology Development (ACTD)($2,000).

C. OTHER PROGRAM FUNDING SUMMARY:

Related RDT&E:

PE 0602232N Space and Electronic Warfare (SEW) Technology

PE 0303109N Satellite Communications - Provides for the EHF transmitter and receiver that utilized the antenna developed under this program.

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
3130 Submarine Communications	86.370	83.980	76.761	61.420	92.435	136.989	144.049	144.867	Continue

D. ACQUISITION STRATEGY:

Program Milestones: FY08 2nd QTR CSD Milestone B (MS-B) for Increment 1; FY08 2nd QTR OE-538 INC 2 MS B; FY10 2Q Adv HDR MS-B.

The acquisition strategy of the CSD program is an Evolutionary Acquisition effort that will produce various capabilities to be fielded in Increments. The Program of Record will enter the Joint Capability Integration and Development System (JCIDS) process, in accordance with DoD 5000.2. The CSD Program focuses on providing Internet Protocol (IP), medium data rate, two-way communication with a submerged submarine throughout the full range of tactically relevant speeds and depths. A family of solutions is required to meet the multitude of communications and operational requirements on general Information Technology (IT) capabilities used by ship and shore operators.

T&E Milestones:

Contract Milestones:

OE-538: 4th QTR FY08 Development Contract Award

SubHDR: 2nd QTR FY08 FOT/SHF Procurement Contract

SubHDR: 2nd QTR FY08 GBS/SHF Procurement Contract

AdvHDR: 3rd QTR FY10

CSD: 3rd QTR FY08 Development Contract Award

E. MAJOR PERFORMERS:

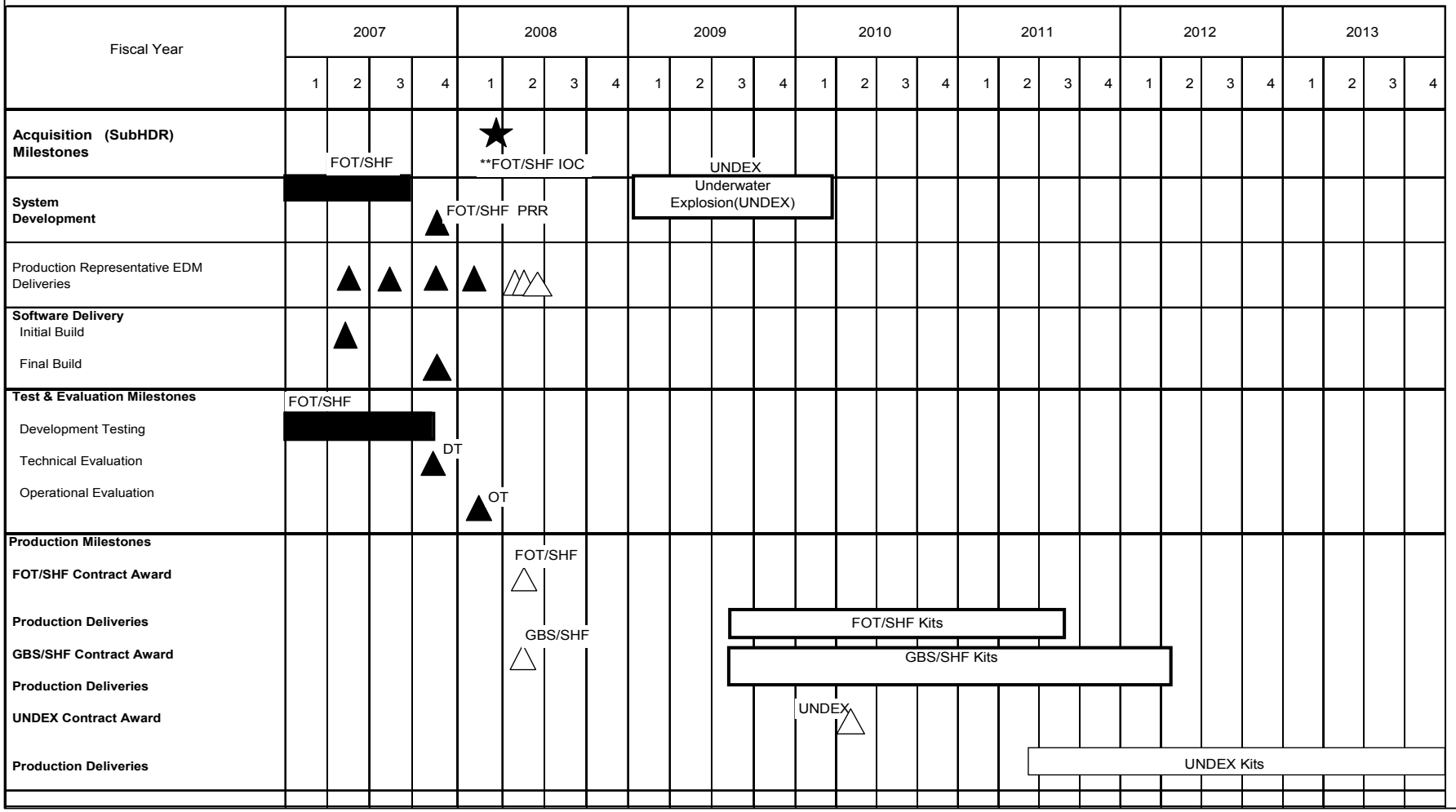
Raytheon, Marlboro, MA - SHF/FOT Development, SubHDR Development

Naval Undersea Warfare Center, Division Newport, RI - System Engineering, Technical Design Agent

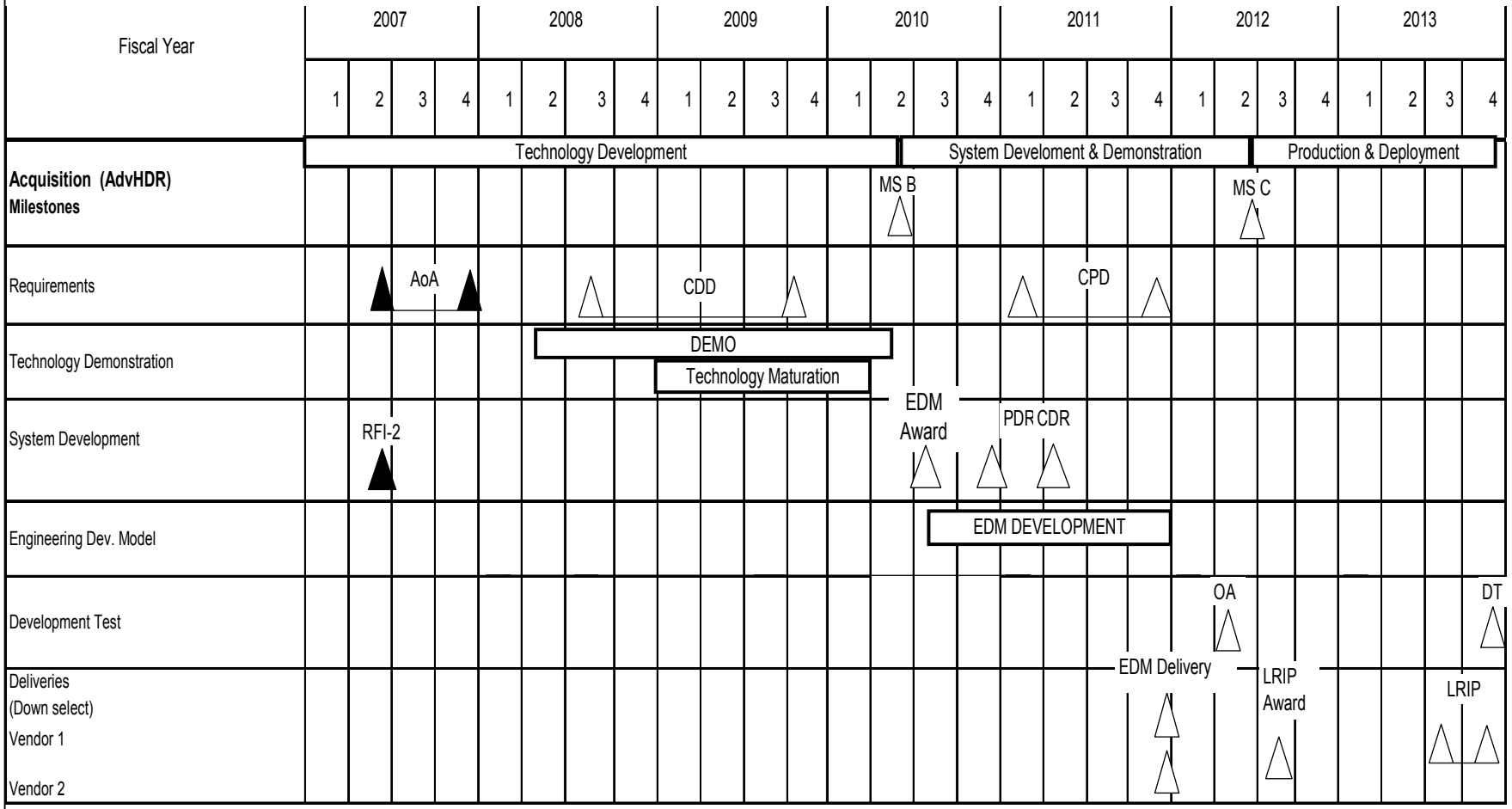
CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Digital Interface Dev (SubHDR)	CPAF	Raytheon, Marlboro, MA	3.545	0.000		0.000		0.000		0.000	3.545	3.545
Digital Dev (SubHDR)	CPAF	Raytheon, Marlboro, MA	7.629	0.553	MAR-07	0.479	FEB-08	1.782	FEB-09	CONT	CONT	0.000
Hardware Dev (SubHDR)	WR	NUWC, Newport, RI	1.456	0.677		0.590		0.477		CONT	CONT	0.000
Hardware Dev (HDR SHF/FOT)	CPAF	Raytheon, Marlboro, MA	14.632	0.000		0.000		0.000		CONT	CONT	0.000
Hardware Dev (AdvHDR)	WR	NUWC, Newport, RI	0.000	0.000		0.000		0.000		CONT	CONT	0.000
Hardware EDM Dev (AdvHDR)	TBD	TBD	0.000	0.000		0.000		10.150	APR-09	CONT	CONT	0.000
Hardware Dev (Trans Eng)	CPAF	Sippican Marion, MA	1.410	0.500	MAR-07	0.000		0.000		CONT	CONT	0.000
Hardware Dev (CSD)	CPAF	Apogen, CA	0.000	0.000		2.800	DEC-07	0.000		CONT	CONT	0.000
Systems/Hardware Dev (CSD)	CPAF	Various	5.374	1.217	MAR-07	8.750	APR-08	17.781	NOV-08	CONT	CONT	0.000
Hardware Dev (OE-538)	CPAF	TBD	0.000	0.000		1.800		3.213		CONT	CONT	0.000
Systems Engineering (OE-538)	CPAF	TBD	0.000	0.000		1.105		1.497		CONT	CONT	0.000
Systems Engineering (OE-538)	WR	NUWC, Newport, RI	0.000	0.000		1.177		1.600		CONT	CONT	0.000
Systems Engineering (SubHDR)	CPFF	Raytheon, Marlboro, MA	5.395	0.921	MAR-07	0.401	FEB-08	3.350	FEB-09	CONT	CONT	0.000
System Engineering (SubHDR)	WR	NUWC, Newport, RI	11.626	0.670		0.275		1.850		CONT	CONT	0.000
Systems Engineering (AdvHDR)	WR	NUWC, Newport, RI	0.000	3.865		3.575		2.457		CONT	CONT	0.000
System Engineering (Trans Eng)	WR	NUWC, Newport, RI	10.737	2.693		2.930		3.583		CONT	CONT	0.000
System Engineering (Trans Eng)	Various	Various	3.500	0.895		1.020		0.950		CONT	CONT	0.000
System Engineering (CSD)	Various	Various	0.000	1.326		2.000		2.000		CONT	CONT	0.000
System Engineering (CSD)	WR	SSC-SD, San Diego, CA	0.000	0.657		1.500		1.035		CONT	CONT	0.000
Systems Engineering (CSD)	WR	NUWC, Newport, RI	5.204	1.500		2.629		1.850		CONT	CONT	0.000
Subtotal Product Development			**70.508**	**15.474**		**31.031**		**53.575**		**0.000**	**3.545**	**3.545**
Remarks:												
Software Development	WR	NUWC, Newport, RI	0.739	0.000		0.000		0.000		0.000	0.739	0.000
Integrated Logistics Support	Various	Various	1.728	0.791		1.151		1.324		0.000	4.994	0.000
Subtotal Support Costs			**2.467**	**0.791**		**1.151**		**1.324**		**0.000**	**5.733**	**0.000**
Remarks:												
Test & Evaluation (CSD)	WR	COTF	0.000	0.110		0.120		0.120		CONT	CONT	0.000

CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Test & Evaluation (OE-538)	WR	COTF	0.000	0.000		0.070		0.070		CONT	CONT	0.000
Test & Evaluation (SubHDR)	WR	NUWC, Newport, RI	0.000	0.000		0.272		0.750		CONT	CONT	0.000
Developmental/Operational T&E	Various	Various	1.267	0.000		0.000		0.000		CONT	CONT	0.000
Test & Evaluation (CSD)	WX	SSC-SD, CA	0.000	0.028		0.240		0.850			1.118	0.000
Subtotal Test and Evaluation			**1.267**	**0.138**		**0.702**		**1.790**		**0.000**	**CONT**	**0.000**
Remarks:												
Program Management Support	Various	Various	4.390	1.087		1.125		1.454		CONT	CONT	0.000
Subtotal Management Services			**4.390**	**1.087**		**1.125**		**1.454**		**0.000**	**0.000**	**0.000**
Remarks:												
Total Cost			78.632	17.490		34.009		58.143		**0.000**	**CONT**	**3.545**

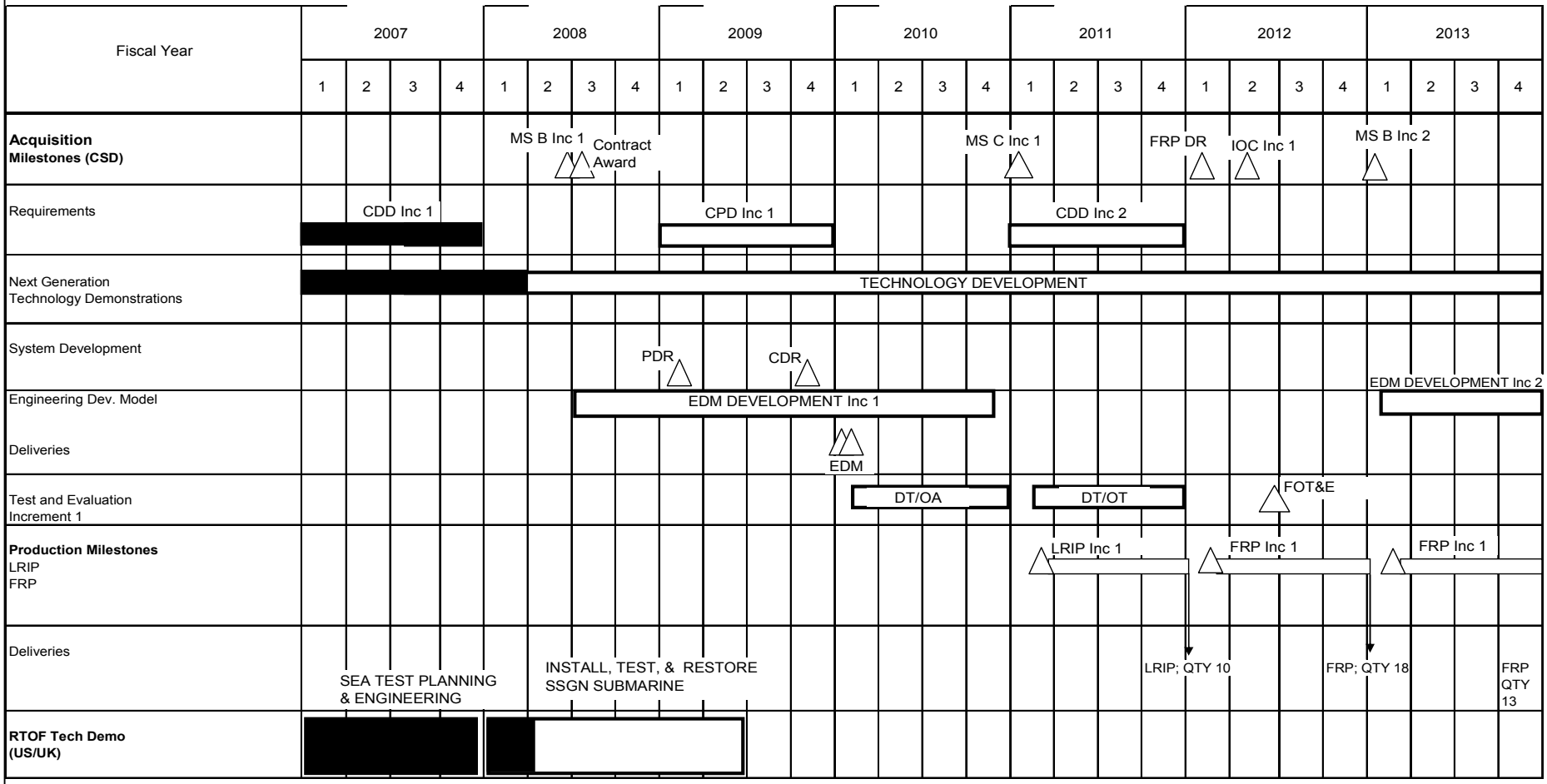
CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**



CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742B/Adv HDR**



CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742C/CSD**



* Technology Demonstrations include Confidence Tests, Trident Warrior, RIMPAC, Valiant Shield 07, and Sea Trials

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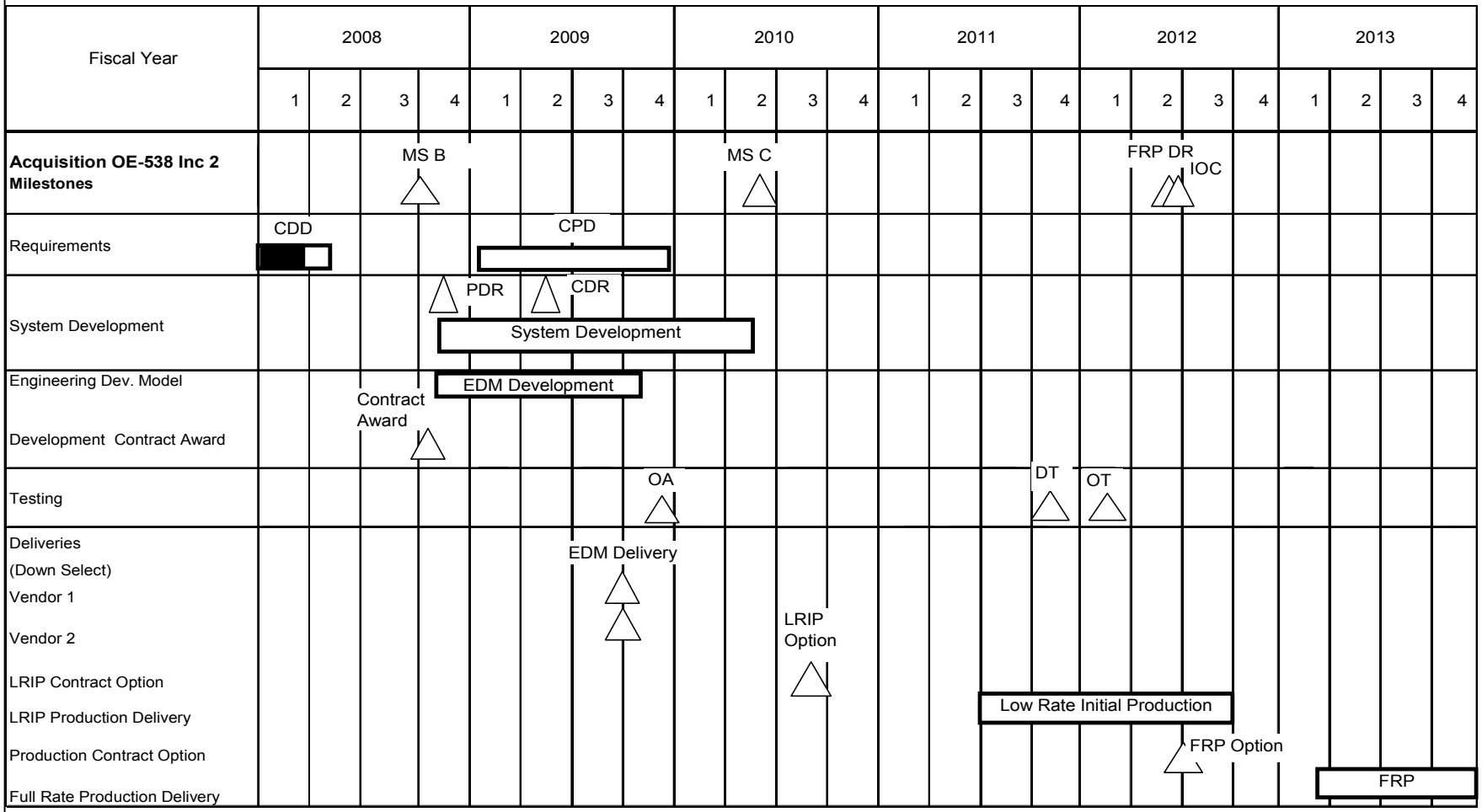
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0742D/OE-538**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0742/SUB INTEGRATED ANT SYS**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
FOT/SHF Production Representative EDM	JAN-07	OCT-07					
FOT/SHF Developmental Testing (DT)	JUL-07						
FOT/SHF Technical Evaluation (TECHEVAL)	JUL-07						
FOT/SHF Operational Evaluation (OPEVAL)		OCT-07					
FOT/SHF Preproduction Readiness Review (PRR)	JUL-07						
FOT/SHF Software Delivery (Initial Build)	JAN-07						
FOT/SHF Software Delivery (Final Build)	JUL-07						
FOT/SHF IOC		JAN-08					
FOT/SHF Contract Award		JAN-08					
FOT/SHF Full Rate Production (FRP) First Delivery			APR-09				
GBS/SHF Contract Award		JAN-08					
GBS/SHF Full Rate Production (FRP) First Delivery			APR-09				
UNDEX Developmental			OCT-08	OCT-09			
UNDEX Contract Award				JAN-10			
UNDEX Full Rate Production (FRP) First Delivery					JAN-11		

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0742B/Adv HDR**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
System Development RFI-1							
Milestone B Decision (MS B)			2Q				
Milestone C Decision (MS C)						2Q	
EDM Award			3Q				
EDM Delivery					3Q		
Analysis of Alternatives (AoA)	2Q	4Q					
Capabilities Development Document (CDD)		3Q	1Q				
Capabilities Production Document (CPD)					1Q-4Q		
Preliminary Design Review (PDR)			4Q				
Critical Design Review (CDR)				4Q			
Operational Assessment (OA)						2Q	
LRIP Award						3Q	
LRIP Delivery							3Q-4Q
Development Test (DT)							4Q

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EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0742C/CSD**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Technology Demonstrations	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
RTOF Install, Test, and Restore		1Q-4Q	1Q-2Q				
Increment 1							
Capabilities Development Document	1Q-4Q						
Milestone B Decision		2Q					
Contract Award		3Q					
EDM Development		3Q-4Q	1Q-4Q	1Q-4Q			
Preliminary Design Review			1Q				
Critical Design Review			4Q				
EDM Deliveries				1Q			
Capabilities Production Document			1Q-4Q				
Test and Evaluation				1Q-4Q	1Q-4Q		
Milestone C Decision					1Q		
Initial Operational Capability						1Q	
Follow-on Test & Evaluation						2Q	
Increment 2							
Capabilities Development Document					1Q-4Q		
Milestone B Decision							1Q
EDM Development							1Q

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0742D/OE-538**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Capability Development Document (CDD)		1Q-2Q					
Milestone B Decision (MS B)		3Q					
Development Contract Award		4Q					
System Development		4Q		2Q			
Engineering Development Model Development		4Q	4Q				
Preliminary Design Review (PDR)		4Q					
Critical Design Review (CDR)			2Q				
Eng Dev Model (EDM) - Delivery			3Q				
Developmental Test (DT)					4Q		
Operational Assessment			4Q				
Operational Test (OT)						1Q	
Capability Production Document (CPD)			1Q-4Q				
Milestone C (MS C) Decision				2Q			
LRIP Contract Award				3Q			
Low Rate Initial Production					3Q-	2Q	
Production Contract Award						2Q	
Full Rate Production							2Q

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	1.693	1.379	1.417	1.454	1.487	1.517	1.545
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program develops and improves techniques, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for Submarine Electronic Warfare Support (ES) systems to be operationally effective in the following mission areas: Joint Littoral Warfare; Joint Surveillance, Space and Electronic Warfare and Intelligence Collection; Maritime Protection; Information Operations, Special Operations Force (SOF) Support; and Joint Strike. Efforts include: (1) Integration of the technology developed and transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770 into the tactical ES system; (2) Resolution of software trouble reports during technology updates, from fleet feedback reports, and Submarine Warfare Federated Tactical System (SWFTS)/Non Propulsion Electronic System (NPES) Tactical Local Area Network (TACLAN) migrations; (3) Integration, test, and installation of COTS technology for system enhancements.

The program supports three submarine mission support categories; Threat Warning/Self Protection; Situational Awareness; and Intelligence, Surveillance and Reconnaissance (ISR). Threat Warning/Self Protection projects evaluate the vulnerability of submarine masts, periscopes and sensors to visual, radar, and infrared detection. It also evaluates state of the art technology to implement periscope/mast and engineering improvements into the tactical ES system, ie AN/BLQ-10 to reduce counter detection threats. Both Situational Awareness and ISR projects develop submarine unique improvements based on emerging technologies that are available from DOD exploratory development programs and other sources.

Threat Warning/Self Protection sub-projects include: Low Probability of Intercept (LPI) Receiver and AN/BLQ-10 software enhancements, Information Warfare Payloads, Environmental Vulnerability Server.

Situational Awareness sub-projects include: Embedded National Tactical Receiver (ENTR), Integration of GALE, and Multifunction Modular Mast (MMM) Antenna, Specific Emitter ID enhancements, algorithm development, passive ranging.

ISR sub-projects include: Advanced EW Tuners, MMM Antenna, processor miniaturization, obsolescence issues, remote maintenance & operation, automatic calibration.

RDTE Funding line supports the entire AN/BLQ-10 ES procurement program. Average FY OPN and SCN hardware procurement yearly funds are $80M.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	1.693	0.000	0.000
RDT&E Articles Quantity	0	0	0

FY 07

NPES software and SWFTS baseline changes. Research and resolve AN/BLQ-10 SPRs. ESM software enhancements. Support IO Payload development.

Support AN/BLQ-10(V)1 ES Virginia Class DT/OT. LPI Receiver DF development, remote maintenance & operations development, EVS development. SEI enhancements.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	1.379	0.000
RDT&E Articles Quantity	0	0	0

FY 08

Conduct Test of Specific Emitter Identification enhancements, Automatic Contact Correlation, LPI Receiver DF, EVS Test, Auto Calibration & testing, IO payload development, algorithm development. NPES and SWFTS software baseline changes.

	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.417
RDT&E Articles Quantity	0	0	0

FY 09

Conduct Test of Specific Emitter Identification, Automatic Contact Correlation, and LPI Receiver. Passive Ranging Development. Processor improvements.

Research and resolve AN/BLQ-10 SPRs.

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)			DATE February 2008
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDTEN/BA 5	**0604503N/SSN-688 AND TRIDENT MODERNIZATION**	**0775/Submarine Supt Equip Prog**	

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
ML003 SSEP Special Purpose Equipment	0.275	0.280	0.285	0.291	0.297	0.303	0.309	Continuing	Continuing
ML007 ICADF	6.448	9.876	6.720	12.142	0.000	15.825	0.000	Complete	69.637
ML008 ICADF Antenna	15.556	7.447	17.354	20.190	20.554	10.492	8.030	Continuing	Continuing
ML009 APB-EW	0.282	3.721	3.817	11.717	31.452	31.048	47.251	Continuing	Continuing
ML010 Tech Refresh Upgrades	0.465	0.312	0.279	0.048	12.606	31.785	14.433	Continuing	Continuing
ML013 ESM IMA Support	0.186	0.190	0.193	0.197	0.201	0.205	0.210	Continuing	Continuing
ML015 AN/BLQ-10(V) SSN ES Backfit Systems	41.661	44.708	32.637	0.000	0.000	0.000	0.000	Complete	119.006
ML016 AN/BLQ-10(V) SSBN ES Systems	0.000	0.000	0.000	17.412	22.309	0.000	0.000	Continuing	Continuing
ML017 AN/BLQ-10 Field Change Kits	2.488	1.583	22.164	12.627	7.630	9.859	1.672	Continuing	58.023
MLCA1 AN/BLQ-10(V) Tech Refresh	2.500	0.000	0.000	0.000	0.000	0.000	0.000	Complete	2.500
SCN LI 201300 (ESM only)	25.320	25.824	26.240	26.665	54.196	55.388	56.606	Continuing	270.239
Related RDT&E:									
(U) PE 0603562N/Submarine Tactical Warfare System	4.756	4.215	4,369	4.462	4.573	4.662	4.754	Continuing	Continuing

D. ACQUISITION STRATEGY:

AN/BLQ-10 (V) ES System - Procurements are executed/managed in accordance with the Acquisition Strategy Report (Rev 4) for AN/BLQ-10(V) ES System dtd 3/7/06 and the Acquisition Plan (Rev 6) for AN/BLQ-10(V) ES System dtd 3/7/06.

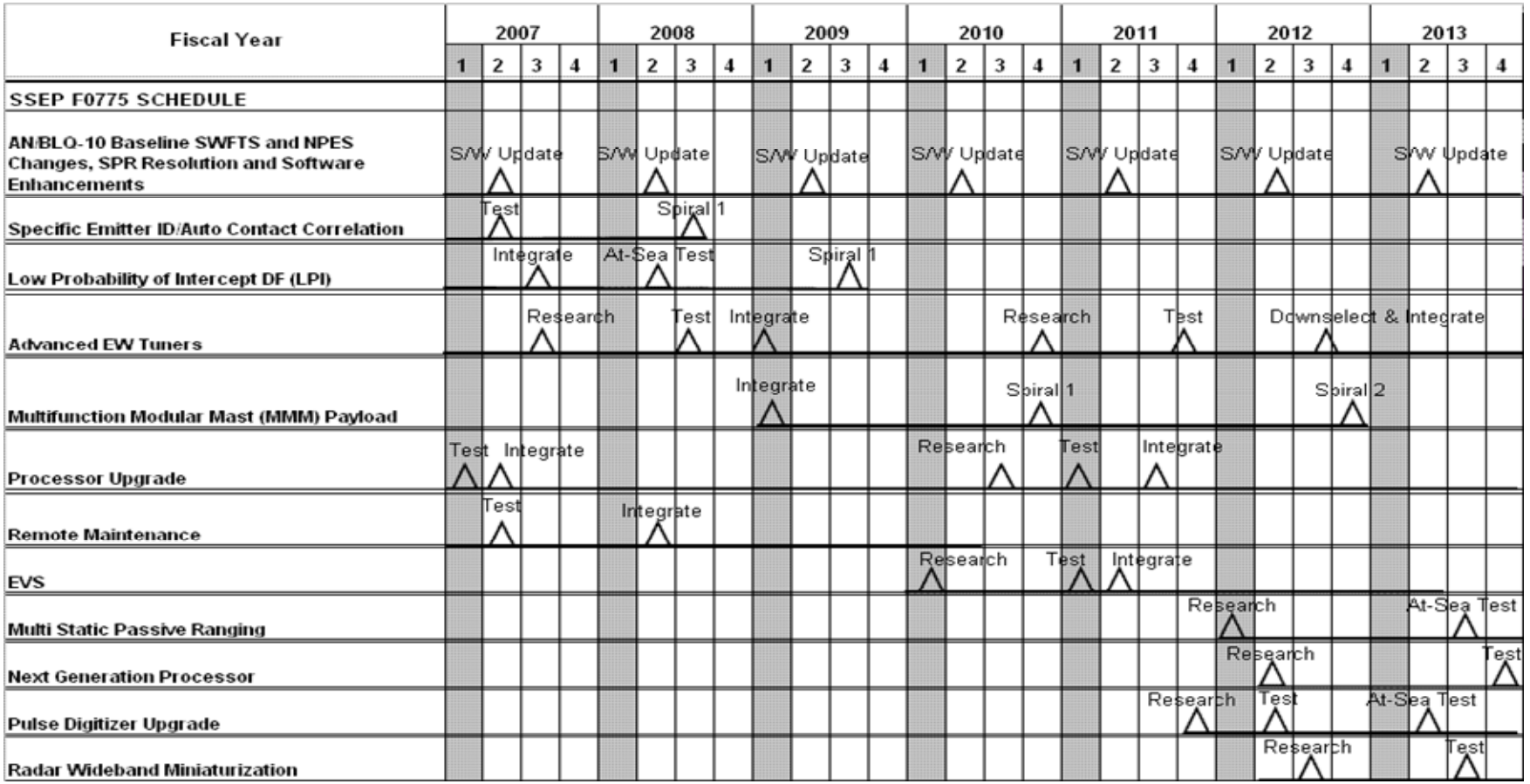
E. MAJOR PERFORMERS:

Lockheed-Martin, Syracuse, NY - AN/BLQ-10 system developer and End-to-End Integrator

NUWC, Newport, RI - EW Library developer, AN/BLQ-10 systems engineering, TEMPALT development, integration support, DT/OT support, ISEA, and TDA.

CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
AN/BLQ-10 ES Product Development	CPFF	Lockheed Syracuse, NY	0.467	0.671	FEB-07	0.632	MAR-08	0.626	MAR-09	CONT	CONT	0.000
Systems Engineering & Test Spt	WX	NUWC, Newport, RI	0.475	0.546	NOV-06	0.291	MAR-08	0.380	MAR-09	CONT	CONT	0.000
Miscellaneous	Various	Various	0.067	0.127	NOV-06	0.041	MAR-08	0.041	MAR-09	CONT	CONT	0.000
Subtotal Product Development			**1.009**	**1.344**		**0.964**		**1.047**		**CONT**	**CONT**	**0.000**
Remarks:												
Engineering Technical Services	CPAF	AT&T GSI, VA	0.250	0.213	MAR-07	0.217	MAR-08	0.222	MAR-09	CONT	CONT	0.000
Subtotal Support Costs			**0.250**	**0.213**		**0.217**		**0.222**		**CONT**	**CONT**	**0.000**
Remarks:												
Travel	WX	NAVSEA	0.070	0.080	DEC-06	0.090	DEC-07	0.091	DEC-08		0.331	0.000
SBIR Assessment			0.056	0.056		0.056		0.057		0.000	0.225	0.000
Labor (Research Personnel)			0.000	0.000		0.052		0.000		0.000	0.052	0.000
Subtotal Management Services			**0.126**	**0.136**		**0.198**		**0.148**		**0.000**	**0.608**	**0.000**
Remarks:												
Total Cost			**1.385**	**1.693**		**1.379**		**1.417**		**0.000**	**CONT**	**0.000**

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
AN/BLQ-10 BASELINE CHANGES, SPR RESOLUTION, AND SOFTWARE ENHANC	2Q	2Q	2Q	2Q	2Q	2Q	2Q
--S/W Specification							
SPECIFIC EMITTER ID/ACC & VIRGINIA DT/OT							
--Test	2Q						
--Spiral 1		3Q					
LOW PROBABILITY OF INTERCEPT DF (LPI)							
--Integrate	3Q						
--At-Sea Test		2Q					
--Spiral 1			3Q				
ADVANCED EW TUNERS							
--Research	3Q			4Q			
--Test		3Q			4Q		
--Integrate			1Q				
--Downselect and Integrate						4Q	
MULTIFUNCTION MODULAR MAST (MMM) PAYLOAD							
--Integrate			1Q				
--Spiral 1				4Q			
--Spiral 2						4Q	
--PROCESSOR UPGRADE							
--Test	1Q				1Q		
--Integrate	2Q				3Q		
--Research				3Q			
REMOTE MAINTENANCE							
--Test	2Q						
--Integrate		2Q					
EVS							
--Research				1Q			
--Test					1Q		
--Integrate					2Q		
MILTI STATIC PASSIVE RANGIING							

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL (CONTINUATION)					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **0775/Submarine Supt Equip Prog**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
--Research						1Q	
--At-Sea Testing							3Q
NEXT GENERATION PROCESSOR							
--Research						2Q	
--Test							4Q
PULSE DIGITIZER UPGRADE							
--Research					4Q		
--Test						2Q	
--At-Sea Test						2Q	
RADAR WIDEBAND MINIATURATION							2Q
--Research						3Q	
--Test							3Q

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**				PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	15.982	16.194	15.999	21.633	19.112	19.175	9.341
RDT&E Articles Qty	0	0	0	0	0	0	0

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Submarine Tactical Communications System project (1411) provides submarines with communications systems designed to: (a) enhance data throughput through automation and integrated network management; (b) convert to ForceNet and tactical data networks, (c) provide submarines Internet Protocol (IP) connectivity; (d) be interoperable with other joint United States (U.S.) and combined allied military networks; and (e) improve reliability, maintainability, and availability. This is accomplished by providing the submarine with a properly integrated mix of fully interoperable Navy standard and Commercial Off-The-Shelf (COTS) communication equipment covering a wide range of frequencies and modes. The Common Submarine Radio Room (CSRR) integrates COTS and Government Off-The-Shelf (GOTS) components into a single radio room configuration for all classes of submarines. CSRR leverages the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) design. The project provides for the development of a single land-based integration Test Facility (ITF) that consolidates existing land-based testing facilities into one facility supporting all classes of submarines. This project funds the development of a replacement Simulation/Stimulation (SIM/STIM) suite to support testing and training requirements. The project includes system engineering efforts associated with demonstration of new technology which will allow the submarine to connect to the Global Information Grid (GIG) and participate in strike group, as well as joint operations. The new technology will ensure the submarine's continued ability to participate in Network-Centric Warfare and exploit its inherent stealth capabilities in support of the joint and combined fight to achieve total battlespace dominance.

(U) JUSTIFICATION FOR BUDGET ACTIVITY:

This program is funded under SYSTEMS DEVELOPMENT and DEMONSTRATION because it encompasses development and demonstration of new end-items prior to production approval decision.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
BCA OPCON architecture	0.653	0.497	0.000
RDT&E Articles Quantity	0	0	0

FY07 Continued system engineering supporting Broadcast Control Authority/Operational Control (BCA/OPCON) architecture ($0.653).
FY08: Continue system engineering supporting BCA/OPCON architecture ($0.497).

	FY 2007	FY 2008	FY 2009
Common Sub Radio Room/Sub Comms Support System	15.329	15.697	15.999
RDT&E Articles Quantity	0	0	0

FY07 Continued system engineering/design development for SCSS modernization ($0.310). Commenced software development to incorporate CSRR Information Assurance (IA) requirements to begin integrating Digital Modular Radio (DMR) capability and other component programs into the Control and Management (C&M) software ($5.072). Commenced systems engineering efforts for Digital Modular Radio (DMR) 6.4 integration and Super High Frequency (SHF) integration into the CSRR architecture ($5.072). Completed system engineering and development of an operator Multi-Purpose Reconfigurable Training System (MRTS) for Increment I ($1.505). Continued IA and Information Security (INFOSEC) certification for all CSRR platforms ($1.740). Continued test and evaluation efforts of the CSRR SEAWOLF and OHIO platforms ($1.741).
FY08: Complete software integration of the CSRR IA requirements for DMR and other component programs into the C&M software ($1.335). Complete systems engineering for DMR 6.4 and SHF integration into the CSRR architecture ($1.643). Continue system engineering/design development for SCSS modernization ($0.232). Commence system engineering and development of MRTS for maintenance trainers ($2.101). Continue implementation of security upgrades to meet IA, INFOSEC and multiple levels of certification requirements General Service (GENSER) and Sensitive Compartmented Information (SCI) for all CSRR platforms ($3.879). Commence software integration of new technologies for CSRR Increment 1 Version 2 into the C&M control system ($2.878). Commence systems engineering design development testing supporting CSRR modernization Increment 1 Version 2 ($3.983).
FY09: Continue system engineering and development of maintenance trainers Inc 1 Ver 0, and upgrade maintenance operator MTRS to CSRR Inc 1 v2 baseline ($3.274). Continue implementation of security upgrades to meet IA, INFOSEC and multiple levels of certification requirements for GENSER and SCI for all CSRR platforms ($3.606). Commence systems engineering/design development and testing for CSRR Increment 1 Version 2 for the VIRGINIA platform and complete on SEAWOLF and SSGN ($5.088). Commence software integration of new technologies for CSRR Increment 2 ($3.591). Commence systems engineering design development testing supporting CSRR modernization Increment 2 for new technologies ($0.440).

C. OTHER PROGRAM FUNDING SUMMARY:

Related RDT&E

PE 0602232N Space and Electronic Warfare (SEW) Technology

PE 0204163N Fleet Communications

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
31300 Submarine Communications	86.370	83.980	76.761	61.420	92.435	136.989	144.049	Continue	Continue

D. ACQUISITION STRATEGY:

CSRR transforms SSN 688, SSBN 726 and SSN 21 Class radio room from suites of class-specific, closed system equipment to a common design which incorporates Open System Architecture (OSA) communications equipment. CSRR will: leverage off VIRGINIA Class Exterior Communication System (ECS) design, use VIRGINIA Class ECS control and management software, apply a systems approach to design and implementation of Joint Maritime Communication System (JMCOMS), and maximize use of COTS products and emerging technologies.

Program Milestones: 4Q FY07 CSRR - FRP

T&E Milestones: Completed CSRR SSBN TECHEVAL 2Q FY07, CSRR SSBN OPEVAL 2Q FY07, CSRR SSGN TECHEVAL 1Q FY07, CSRR GN OPEVAL 3Q FY07. All FY07 testing reported operationally suitable and operationally effective. FOT&E scheduled 3Q FY10 platform TBD (SEAWOLF or SSGN).

E. MAJOR PERFORMERS:

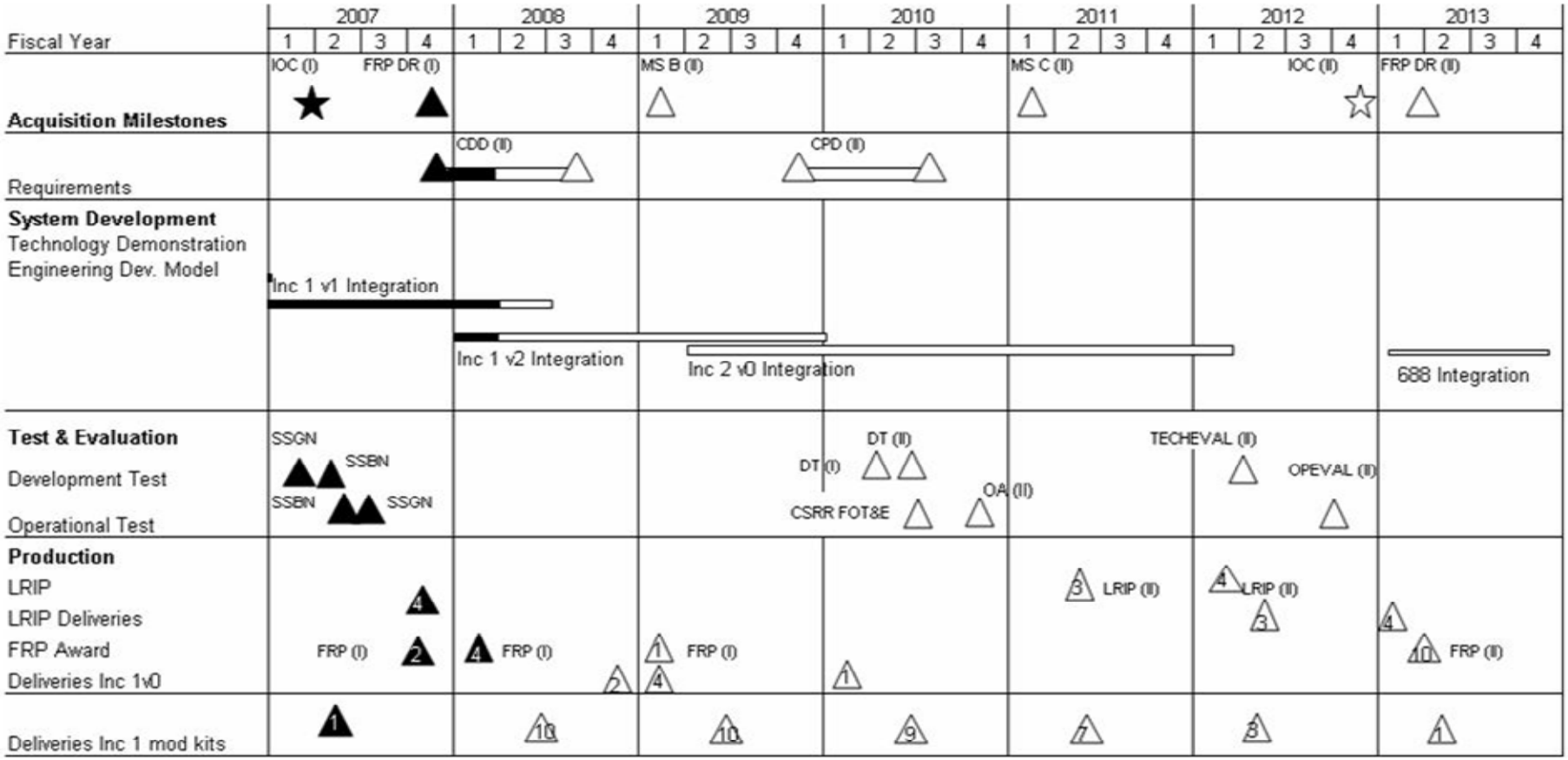
Naval Undersea Warfare Center, Division Newport, RI - Technical Design Agent & System Integration

Lockheed Martin/Maritime Sensors & Systems, Eagan, MN - Software Development

CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Hardware Development*	CPFF	SSC-SD/NUWC Newport, RI	2.776	0.000		0.000		0.000		0.000	2.776	0.000
Hardware Development**	CPFF	SSCs/NUWC Newport, RI	0.211	0.000		0.000		0.000		0.000	0.211	0.000
MCS Development	Various	Motorola, misc labs	10.214	0.000		0.000		0.000		0.000	10.214	0.000
H/W Development Facilities	Various	NUWC Newport, RI	0.000	0.000		0.000		0.000		0.000	0.000	0.000
Software Development	CPFF/WX	SSC-SD San Diego, CA	2.068	0.000		0.000		0.000		0.000	2.068	0.000
Software Development	WX	NUWC Newport, RI	5.498	0.000		0.000		0.000		0.000	5.498	0.000
MRTS Development	CPFF	NAVAIR, Orlando	1.738	1.505	JAN-07	2.349	JAN-08	1.474	JAN-09	CONT	CONT	0.000
Systems Engineering	Various	Misc Labs	14.927	2.879	DEC-06	3.700	DEC-07	4.665	DEC-08	CONT	CONT	0.000
Systems Eng/Design 688 Class	Various	Misc Labs	3.074	0.300	DEC-06	0.232	DEC-07	0.000	DEC-08	CONT	CONT	0.000
Site Platform Integration/Certification	Various	NUWC Newport, RI	9.676	0.498	DEC-06	0.588	DEC-07	0.323	DEC-08	CONT	CONT	0.000
BCA/OPCON architecture	WX	NUWC Newport, RI	2.533	0.653	DEC-06	0.497	DEC-07	0.000		0.000	3.683	0.000
Subtotal Product Development			**52.715**	**5.835**		**7.366**		**6.462**		**CONT**	**CONT**	**0.000**
Remarks: * SCSS Development for SSN 688 Class submarines ** CSRR Development for OHIO Class submarines												
Software Development (CSRR)	CPAF	Lockheed Martin Tech Sys	11.393	4.867	JAN-07	2.860	JAN-08	4.267	JAN-09	CONT	CONT	0.000
Integrated Logistics Support	WR	NUWC Newport, RI	0.300	0.944	DEC-06	0.584	DEC-07	0.453	DEC-08	CONT	CONT	0.000
Software Engineering	WR	SSC-SD San Diego, CA	1.153	0.000		0.000		0.000		0.000	1.153	0.000
INFOSEC/IA Certification	Various	Various	1.666	1.740	JAN-07	3.859	JAN-08	1.770		CONT	CONT	0.000
Subtotal Support Costs			**14.512**	**7.551**		**7.303**		**6.490**		**CONT**	**CONT**	**0.000**
Remarks:												
Developmental/Operational T&E	Various	Various	6.165	1.741	DEC-06	0.677	DEC-07	2.299	DEC-08	CONT	CONT	0.000
Subtotal Test and Evaluation			**6.165**	**1.741**		**0.677**		**2.299**		**CONT**	**CONT**	**0.000**
Remarks:												

CLASSIFICATION:	UNCLASSIFIED											
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**					PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2007 Cost ($000)	FY 2007 Award Date	FY 2008 Cost ($000)	FY 2008 Award Date	FY 2009 Cost ($000)	FY 2009 Award Date	Cost to Complete ($000)	Total Cost ($000)	Target Value of Contract
Program Management Support	Various	Various	6.240	0.855	DEC-06	0.848	DEC-07	0.748	DEC-08	CONT	CONT	0.000
Subtotal Management Services			**6.240**	**0.855**		**0.848**		**0.748**		**CONT**	**CONT**	**0.000**
Remarks:												
Total Cost			**79.632**	**15.982**		**16.194**		**15.999**		**CONT**	**CONT**	**0.000**

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**			PROJECT NUMBER AND NAME **1411/SUBM TACT COMM SYS**			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
IOC (Increment II)						APR-12	
Full Rate Production Decision (FRP DR) (Increment II)							JAN-13
Low Rate Initial Production LRIP (Increment II)					JAN-11		
TECHEVAL (Increment II)						JAN-12	
OPEVAL (Increment II)						APR-12	
Capabilities Production Document (Increment II)	JUL-07	OCT-APR 08					
OA (Increment II)				JUL-10			
Milestone C (Increment II)					OCT-10		
CSRR FOT&E			APR-09				
Capabilities Development Document (Increment II)		OCT-07					
Milestone B (Increment II)			OCT-08				
SSBN OPEVAL	JAN-07						
SSGN TECHEVAL	OCT-06						
SSGN OPEVAL	APR-07						
SEAWOLF TECHEVAL/OA (FY06)							
SEAWOLF OPEVAL (FY06)							
SSBN TECHEVAL	JAN-07						
IOC (Increment I)	OCT-06						
Full Rate Production Decision (FRP DR) (Increment I)	JUL-07						
FRP Decision (Increment II)							JAN-13

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **9999/CONGRESSIONAL ADDS**	

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2007	FY 2008	FY 2009
Common Submarine Radio Room (CSRR)/Submarine Communications Support System	3.894	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 Accomplishments: Initiated Information Assurance (IA) necessary to achieve the maximum level of integrated control and management of radio room communications equipment to enhance operability and situational awareness.			
	FY 2007	FY 2008	FY 2009
9843N/ Submarine-Enabling Airborne Data Exchange (SEADEEP)	2.337	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 Accomplishments: Continue to develop the communications signal processor electronics and software (source code) and related documentation.			
	FY 2007	FY 2008	FY 2009
9A40N/ Active Intercept and Ranging System	0.973	3.180	0.000
RDT&E Articles Quantity	0	0	0
The Active intercept and Ranging System will test a laboratory theory at sea for an active intercept and ranging system that uses GPS and cellular phone localization algorithms on a submarine. Should the test prove successful and should additional funds become available then the algorithms will be integrated into the sonar systems aboard US Navy submarines.			
	FY 2007	FY 2008	FY 2009
9A41N/ Connectionless Technology for Towed Arrays	1.602	0.000	0.000
RDT&E Articles Quantity	0	0	0
Funds would be used to initiate a research and development effort to integrate connectionless technology into current single Thin Line and future Thin Line Twin Line Towed Array capability on submarines, including the TB-33 system by including a common twin line thin line capability for both submarines and surveillance platforms. Enhancements to the baseline TB-33 design would allow a common modular set of array components to be built to meet both single line and twin line requirements			
	FY 2007	FY 2008	FY 2009
9A42N/ Twin Thin Line Towed Array Processing Imp. ARCI	1.602	3.180	0.000
RDT&E Articles Quantity	0	0	0
Twin Thin Line Towed Array Processing Improvements will accomplish specific research and development efforts that would significantly increase every submarine's war fighting capability with improved long range detection (i.e. twin line SURTASS like capability that can be covertly deployed), increased processing power for improved target detection, classification, hold, and tracking (i.e. Field Programmable Gate Arrays), and significantly improve reliability for continuous deployed operations.			
	FY 2007	FY 2008	FY 2009
9384C/ Affordable Towed Array Construction	1.266	0.000	0.000
RDT&E Articles Quantity	0	0	0

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE February 2008
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604503N/SSN-688 AND TRIDENT MODERNIZATION**	PROJECT NUMBER AND NAME **9999/CONGRESSIONAL ADDS**

Affordable Towed Array Construction development provides evaluation through fabrication of additional hardware, automate manufacturing processes to improve product quality, increase production rate and minimize defects resulting in improved system reliability and reduced cost, and qualify commercial sources for critical components including amplitude modulators, fiber Bragg gratings, and low noise lasers.

	FY 2007	FY 2008	FY 2009
9840C/ Improved Submarine Towed Array Reliability	1.754	0.000	0.000
RDT&E Articles Quantity	0	0	0

Improved Submarine Towed Array Reliability development provides procurement of Towed Array Handler reliability improvements such as the Capstan Wrap Reduction Modification and Control/Indicator unit upgrades which reduce stress on the towed array, improving reliability and availability of the array.

	FY 2007	FY 2008	FY 2009
9841C/ SONAR Advanced Optical Co-Processor (SAOC)	0.974	0.000	0.000
RDT&E Articles Quantity	0	0	0

Insertion of optical computer technology into the ARCI offers the potential of skip-generation increases in computational processing power while remaining within on-board physical size, weight, heat production, and power consumption constraints. Funding will support testing advanced algorithm effectiveness, identification of current and un-met candidate signal processing needs that can be off-loaded from the ARCI digital computers and executed on the SOAC, develop a prototype SAOC for formal system test and evaluation, and establish Low Rate Initial SAOC
Pre-production Plan and LRIP Run.