EXHIBIT R-2, RDT&E Budget Item Justification							DATE: FEBRUARY 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-07**					R-1 ITEM NOMENCLATURE 0205620N Surface ASW Combat System Integration			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		**20.397**	**12.751**	**9.417**	**9.849**	**10.015**	**10.179**	**10.405**
0896 / AN/SQQ-89 Modifications		**0.000**	**1.244**	**4.784**	**4.936**	**5.008**	**5.075**	**5.184**
1916 / Surface ASW Systems Improvements		**18.964**	**3.207**	**4.633**	**4.913**	**5.007**	**5.104**	**5.221**
1916C / Surface ASW System Improvements		**0.000**	**6.100**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9627 / Marine Mammal Detection and Mitigation		**1.433**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9795N / Surface Ship Sonar Integrated Data Fusion		**0.000**	**2.200**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The objective of this Program Element (PE) is to significantly improve existing surface ship sonar system capabilities through quick and affordable development and integration of emergent transformational technologies.

Project 0896 focuses on the identification, development, test and integration of the most promising ASW technologies into the AN/SQQ-89(V) Surface USW Combat System. This project will provide a clear transition path for emergent transformational ASW technologies to be quickly and affordably developed and incorporated into the AN/SQQ-89(V). This project will capitalize on a Rapid Technology Transition Process, enabling the aggressive pursuit of improvements to system portability, extension of interoperability with multiple platforms, and opportunity to export these capabilities Navy wide. Time phased insertion of ASW COTS improvements will address the entire combat system, including new sensor integration, acoustics, fire control, contact management, performance prediction, operator productivity and on-board training.

Project 1916 improves AN/SQQ-89(V) Measures of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth. This project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) initiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar biostatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (Baseline 3/4) and DDG51 (FLT IIA) class ships. The Open Architecture (OA) AN/SQQ-89A(V)15 system drives the spiral development process and provides budget flexibility to make COTS/OA technology solutions and ARCI-type initiatives affordable. This will be accomplished via the incorporation of select Pre-Planned Product Improvements (P3I) and emergent, transformational ASW technologies (as developed under Project 0896) delivered to the AN/SQQ-89(V) prime integrator every two years.

Projects 1916 (FY 2005) and 1916C (FY 2006) include Congressional Adds for 'Surface Ship ASW R&D Improvements'. Funding will be used to continue the development of promising technologies for at-sea tests in representative war fighting environments.

Projects 1916 (FY 2005) and1916C (FY 2006) include Congressional Adds for 'Common Surface and Air Undersea Warfare'. Funding will be used to continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single “Best of Breed” Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.

Project 9627 (FY 2005) includes Congressional Add for 'Marine Mammal Detection and Mitigation (MMDM)'. Funding was used to implement and improve technology that was developed under a Phase I and Phase II Small Business Technology Transfer (STTR) that will allow the Navy to detect marine mammals vocalizing in the vicinity of naval vessels. Once the system alerts on the marine mammal vocalizations, the system will localize marine mammals and provide mitigation recommendations to the sonar operator and ship’s captain (e.g., cease sonar operations, maneuver the vessel, etc.).

Project 9795N (FY 2006) includes Congressional Add for 'Surface Ship Sonar Integrated Data Fusion Initiative'. Funding will be used to support the development, test and evaluation of an integrated sonar data fusion and display capability for Surface Ship USW Combat Systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications			
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.000**	**1.244**	**4.784**	**4.936**	**5.008**	**5.075**	**5.184**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The AN/SQQ-89 Modifications Project will focus on the identification, development, test, integration and delivery of the most promising ASW technologies to the AN/SQQ-89(V) Surface USW Combat System. This project will provide a clear transition path for emergent transformational ASW technologies (ie, through Task Force ASW initiatives) to be quickly and affordably developed and incorporated. This project will capitalize on a Rapid Technology Transition Process, enabling the aggressive pursuit of improvements to system portability, extension of interoperability with multiple platforms, and opportunity to export these capabilities Navy wide. Time phased insertion of ASW COTS improvements will address the entire combat system, including new sensor integration, acoustics, fire control, contact management, performance prediction, operator productivity and on-board training.

This project will take technologies developed by PEO IWS 5 (Program Executive Office for Integrated Warfare Systems, Undersea Systems Program Office), Office of Naval Research (ONR), Defense Advanced Research Planning Agency (DARPA) and the Oceanographer of the Navy that achieve significant improvements in ASW effectiveness and integrate them into the AN/SQQ-89(V) Surface USW Combat System. The following improvements have been considered in the near term: Develop and integrate the Low Frequency Array's (LFA) low frequency coherent multi-static processing capability for the AN/SQR-19 towed array group; leverage ARCI's Sparsely Populated Volumetric Array (SPVA) technology to increase bandwidth and incorporate acoustic intercept capability for the surface community; develop a Data Fusion capability that will integrate ASW, radar and other non-acoustic sensors into an integrated display environment; and develop an effective and affordable underwater Acoustic Communications (ACOMMS) system for seamless communications between ASW platforms. Additional improvements will be developed and integrated as new, promising technologies are identified.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	0896 AN/SQQ-89 Modifications

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Identification, Development and Integration of ASW Technologies Into adjunct AN/SQQ-89(V) Surface USW Combat Systems		0.000	1.244	4.534
RDT&E Articles Quantity				

FY06-07: Identify technologies developed by PEO IWS 5, Office of Naval Research (ONR), Defense Advanced Research Planning Agency and the Oceanographer of the Navy that may achieve significant improvements in ASW effectiveness if integrated into the AN/SQQ-89(V) Surface USW Combat System. Selected promising technologies will be sufficiently integrated into adjunct systems installed in the AN/SQQ-89(V) such as the Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) so that at-sea tests can be conducted and performance assessed. Integration of successful technologies will be completed for installation on CG47, DDG51 and FFG7 class ships as part of SIPS software updates. Successful software improvements will also be passed on to the AN/SQQ-89(V) prime integrator as part of the spiral development build process under Project 1916, for fielding in the open system architecture AN/SQQ-89A(V)15 USW Combat System that is being installed on CGs 59-73 and DDGs 79-112.

		FY 05	FY 06	FY 07
At-Sea Testing of Select ASW Technologies		0.000	0.000	0.250
RDT&E Articles Quantity				

FY07: Coordinate and conduct at-sea test of select emergent, significant ASW technologies on ships equipped with AN/SQQ-89(V) adjunct Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) systems. Assess results.

		FY 05	FY 06	FY 07
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	0896 AN/SQQ-89 Modifications

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	0.000	1.263	5.149
FY 2007 President's Budget	0.000	1.244	4.784
Total Adjustments	0.000	-0.019	-0.365
Summary of Adjustments:			
Recisissions		-0.019	
Other misc. changes			-0.365
Subtotal	0.000	-0.019	-0.365

Schedule:

Not applicable.

Technical:

Not applicable.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	0896 AN/SQQ-89 Modifications

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN BLI 2136/ AN/SQQ-89 Surface ASW Combat System	16.1	34.0	37.8	37.5	99.1	93.5	106.6	Continuing	Continuing
RDT&E PE 0205620N/ Surface ASW Systems Improvements/ Project 1916	19.0	3.2	4.6	4.9	5.0	5.1	5.2	Continuing	Continuing
RDT&E PE 0603553N/ Surface ASW/ Project 1704	17.2	17.1	38.7	42.3	45.6	55.0	55.4	Continuing	Continuing

E. ACQUISITION STRATEGY:

Identify and test promising evolutionary and transformational technologies via incorporation on adjunct Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) systems; deliver successful technologies in the form of software updates to AN/SQQ-89(V) prime system integrator for integration into the AN/SQQ-89A(V)15 USW Combat System via spiral development build process.
Award new, competitive contract for AN/SQQ-89(V) prime system integrator in FY 2007.

F. MAJOR PERFORMERS:

Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic processor, acoustic intercept, and prime contractor for adjunct AN/SQQ-89(V) Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) programs.
Adaptive Methods (AM), MD - SBIR Phase III contract for engineering services in support of hardware/software integration, and test of advanced sensor interfaces and sensor processing improvements including Data Fusion (DF), Adaptive Beamforming (ABF), and Calibrated Reference Hydrophone (CRH) sensor interface.
Naval Sea Systems Command, Newport, RI - AN/SQQ-89(V) Technical Design Agent support.
University of Texas Applied Research Laboratory (UT/ARL), TX - Sonar Performance Prediction Functional Segment (SPPFS) software development.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: FEBRUARY 2006				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**			PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
S/W Development/Test/Integration	C/CPFF	AAC, NY	0.000					0.135	02/06	0.551	11/06	Continuing	Continuing	
S/W Development/Test/Integration	C/CPFF	AM, MD	0.000					0.793	02/06	3.233	11/06	Continuing	Continuing	
S/W Support	WX	ONI, MD	0.000					0.060	02/06	0.060	10/05	Continuing	Continuing	
S/W Development/Test/Integration	C/CPFF	UT/ARL, TX	0.000					0.080	02/06	0.324	10/06	Continuing	Continuing	
S/W Development/Testing/Support	Var.	Var.	0.000					0.176	02/06	0.366	11/05	Continuing	Continuing	
Subtotal Product Development			0.000			0.000		1.244		4.534		Continuing	Continuing	
Remarks:														
Subtotal Support			0.000			0.000		0.000		0.000		0.000	0.000	
Remarks:														

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: **FEBRUARY 2006**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**		PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	WX	NAVSEA/NEWPORT, RI	0.000							0.250	10/06	Continuing	Continuing	
Subtotal Test & Evaluation			0.000			0.000		0.000		0.250		Continuing	Continuing	
Remarks:														
Subtotal Management			0.000			0.000		0.000		0.000		Continuing	Continuing	
Remarks:														
Total Cost			0.000	0.000		0.000		1.244		4.784		Continuing	Continuing	
Remarks:														

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-07**

PROGRAM ELEMENT NUMBER AND NAME: 0205620N Surface ASW Combat System Integration

PROJECT NUMBER AND NAME: 0896 AN/SQQ-89 Modifications

Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition/Contract Milestones/Reviews											New Contract Award - AN/SQQ-89(V) Prime System Integrator △																	
Identification of Promising ASW Technologies for Test on SQQ-89(V) Adjunct Systems										▭																		
Select Technologies for Test on SQQ-89(V) Adjunct Systems												▭																
Integration of Select Technologies Into Adjunct SQQ-89(V) Systems for At-Sea Test												△			△				△				△				△	
Complete Integration of Successful Technologies for Installation via S/W Upgrades on Adjuncts and SQQ-89A(V)15														△				△				△				△		
Test & Evaluation Milestones At-Sea Test and Evaluation of Select Technologies on SQQ-89(V) Adjunct Systems												▭				▭				▭				▭				▭
Production Milestones Production S/W Upgrade Delivery to Adjunct SQQ-89(V) SIPS Backfit Program (OPN BLI 2136)														△				△										
Production S/W Upgrade Delivery to SQQ-89A(V)15 Spiral Development Build Program (RDT&E,N PE 0205620N, Project 1916)																		△				△				△		

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 0896 AN/SQQ-89 Modifications			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
New Contract Award - AN/SQQ-89(V) Prime System Integrator				1Q				
Identification of Promising ASW Technologies			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Select Technologies for Test on Adjunct SQQ-89(V) Systems				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Integration Into Adjunct SQQ-89(V) Systems for At-Sea Test				3Q	3Q	3Q	3Q	3Q
At-Sea Test of Select Technologies on Adjunct SQQ-89(V) Systems				4Q	4Q	4Q	4Q	4Q
Complete Integration of Successful Technologies for Installation via S/W Upgrades					2Q	2Q	2Q	2Q
Production S/W Delivery to Adjunct SQQ-89(V) SIPS OPN Backfit Program					2Q	2Q		
Production S/W Delivery to SQQ-89A(V)15 RDT&E,N Spiral Development Build Program						2Q	2Q	2Q

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2006**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT NUMBER AND NAME 0205620N Surface ASW Combat System Integration			PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements				
COST ($ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**18.964**	**3.207**	**4.633**	**4.913**	**5.007**	**5.104**	**5.221**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Surface ASW Systems Improvements Project will support essential performance enhancements to AN/SQQ-89(V) and Surface Ship Sonar Systems. This project will improve AN/SQQ-89(V) Measures of Performance (MOP) by enhancing detection, tracking, classification, active and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth.

This project will take advantage of the AN/SQQ-89(V) Open System Architecture and Acoustic Rapid COTS Insertion (ARCI) initiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar biostatics (Echo Tracker Classifier - ETC), an ARCI passive ASW processor, and torpedo defense capabilities (Forward and Aft sector coverage with Wake Homer protection). This COTS-based Surface USW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 and DDG51 (FLT IIA) class ships. This project has delivered the AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype, performed installation on board CG73, and conducted subsequent Developmental Test & Evaluation (DT&E) and Initial Operational Test & Evaluation (IOT&E).

The open system architecture and high performance COTS processing hardware on ships fielded with the AN/SQQ-89A(V)15 combat system provides an opportunity to integrate select Pre-Planned Product Improvements (P3I) as well as emergent, transformational ASW technological improvements (as developed under Project 0896) that were previously unachievable. The USW suites on these ships will require periodic upgrades to remain effective well into the 21st century. To achieve this, this project will package and deliver incremental upgrades every two years to the AN/SQQ-89A(V)15 production program via a spiral development build process by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral, and via reduced manning on AN/SQQ-89(V) equipped ships, active classification sonar upgrades, marine mammal detection and mitigation, Multi-Static Active ASW, new RAPTOR radar processing, and upgraded technologies such as algorithm improvements, increased passive narrow band (PNB) frequency, improved extended echo ranging (EER) and beamformer improvements. A rigorous testing program is also required to ensure that these performance enhancements are operationally effective and suitable.

Project 1916 (FY 2005) includes a Congressional Add for 'Surface Ship ASW R&D Improvements'. Funding was used to continue the development of promising technologies for at-sea tests in representative war fighting environments.

Project 1916 (FY 2005) includes a Congressional Add for 'Common Surface and Air Undersea Warfare'. Funding was used to continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single “Best of Breed” Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW Systems Improvements

B. Accomplishments/Planned Program

		FY 05	FY 06	FY 07
Surface Ship ASW R&D Improvements		7.265	0.000	0.000
RDT&E Articles Quantity				

FY05: (Congressional Add) Continued the development of Surface Ship ASW improvements through use of portable, modular software to ease transition to new families of COTS hardware and low cost incorporation of improved processing algorithms. Address critical surface sonar capability shortfalls such as: active processing in littoral areas, torpedo defense, and automation technology for reduced manning by using the Advanced Processing Builds (APB) model that has rapidly delivered transformational modernization through exploitation of application reuse and low cost incorporation of improved processing algorithms.

		FY 05	FY 06	FY 07
Common Surface and Air Undersea Warfare		1.353	0.000	0.000
RDT&E Articles Quantity				

FY05: (Congressional Add) Continued the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single “Best of Breed” Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities. This capability will be demonstrated using network based, mainstream technology, to evaluate increased USW situational awareness, accuracy, and reduced USW prosecution time through automated fusion and connectivity of shipboard USW and airborne sensor data contacts.

		FY 05	FY 06	FY 07
LAMPS Mk III Blk II CAUSS & Ku Band Integration		0.500	0.000	0.000
RDT&E Articles Quantity				

FY05: Completed the integration of the LAMPS Mk III Blk II Common Airborne Undersea Sensor Software (CAUSS) and Ku Band on-board AN/SQQ-89(V) platforms, including the AN/SQQ-89A(V)15.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW Systems Improvements

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
AN/SQQ-89(V) Test & Evaluation Program		0.390	0.400	0.450
RDT&E Articles Quantity				

FY05-07: Providing AN/SQQ-89(V) test and evaluation planning support, System Assessment Team (SAT) analysis, update Test & Evaluation Master Plan (TEMP) to reflect AN/SQQ-89A(V)15 spiral development build program, coordinate and conduct roll-on roll-off tests of AN/SQQ-89(V) systems, provide performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using MOP and measures of effectiveness (MOE) methods.

		FY 05	FY 06	FY 07
AN/SQQ-89A(V)15 At-Sea Testing		1.896	0.000	0.000
RDT&E Articles Quantity				

FY05: Completed the resolution of issues that arose from A/SQQ-89A(V)15 Build 0 FY04 Developmental Test & Evaluation (DT&E) DT-IIIAQ. Coordinate and conduct Initial Operational Test & Evaluation (IOT&E) OT-IIIK of the AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype system.

		FY 05	FY 06	FY 07
Enhancements via SQQ-89A(V)15 Spiral Development Build Process		7.560	2.807	4.183
RDT&E Articles Quantity				

FY05: Completed development of a common superset software baseline for AN/SQQ-89A(V)15 (Backfit on CG47 and DDG51 class) and AN/SQQ-89(V)15 w/ EC 200 (Forward fit on DDG51 class). Resolve remaining delta issues that arose from AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype FY05 Operational Test OT-IIIK.
FY05-07: Developing modest enhancements to the AN/SQQ-89A(V)15 Open System Architecture via the incorporation of transformational technologies through a spiral development process. Items include Explosive Source integration with AN/SQQ-89(V) processes, simplification of displays and active processing, incorporation of all Scaled Improved Performance Sonar (SIPS) features, Sonar Logger capability to significantly reduce operator data logging requirements, fusion of sensor data to reduce the number of displays required for system operation, and development of improved torpedo detection algorithms to be incorporated into the Torpedo Recognition and Alertment Functional Segment (TRAFS) for delivery to CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs. Resolve issues that arise from AN/SQQ-89(V) Test & Evaluation program. Build 1 segment software update/integration effort completes in FY06. Build 2 segment software update development begins FY06 and integration effort completes in FY08. Build 3 segment software development begins FY07 and integration effort completes in FY09.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW Systems Improvements

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY 2006 President's Budget	19.387	3.256	4.831
FY 2007 President's Budget	18.964	3.207	4.633
Total Adjustments	-0.423	-0.049	-0.198
Summary of Adjustments:			
Recisissions		-0.049	
Other General Provisions	-0.423		
Other misc. changes			-0.198
Subtotal	-0.423	-0.049	-0.198

Schedule:

Not applicable.

Technical:

Not applicable.

R-1 SHOPPING LIST - Item No. 181

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916 Surface ASW Systems Improvements

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
OPN BLI 2136/ AN/SQQ-89 Surface ASW Combat System	16.1	34.0	37.8	37.5	99.1	93.5	106.6	Continuing	Continuing
RDT&E PE 0205620N/ AN/SQQ-89 Modifications/ Project 0896	0.0	1.2	4.8	4.9	5.0	5.1	5.2	Continuing	Continuing

E. ACQUISITION STRATEGY:

Completed AN/SQQ-89A(V)15 Build 0 Pre-Production Prototype, performed installation, conducted Developmental Test & Evaluation (DT&E), and Initial Operational Test & Evaluation (IOT&E) 4Q FY 2005. Via spiral development build process, incorporate evolutionary and transformational technologies into AN/SQQ-89A(V)15 systems at scheduled intervals.
Award new, competitive contract for AN/SQQ-89(V) prime system integrator in 1Q FY 2007.

F. MAJOR PERFORMERS:

Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic processor, acoustic intercept, and prime contractor for 'Common Surface and Air Undersea Warfare' FY 2005 Congressional Add provided to develop and test a single “Best of Breed” Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities.
Adaptive Methods (AM), MD - SBIR Phase III contract for common acoustic processor and towed array/beamformer processing improvements to the Multi-Function Towed Array (MFTA) functional segment.
General Dynamics-AIS (formerly DSR), VA - SBIR Phase III contract for common acoustic processor, prime contractor for 'Surface Ship ASW R&D Improvements' FY 2005 Congressional Add provided to complete the development of promising technologies for at-sea tests in representative warfighting environments.
Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD - Design, development and integration of MFTA, Torpedo Detection Classification and Localization (TDCL) improvements, and emerging active sonar technologies into the AN/SQQ-89(V).
Lockheed Martin, NY - Prime AN/SQQ-89(V) System Integrator, Production and Design Agent.
Naval Sea Systems Command, Newport, RI - AN/SQQ-89(V) Technical Design Agent support.
Naval Sea Systems Command, Dahlgren, VA - AN/SQQ-89(V) Technical Design Agent support.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)													DATE: **FEBRUARY 2006**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**		PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
S/W Development/Integration/Test	C/CPFF	AAC, NY	10.485			1.656	12/04	0.742	12/05	0.825	11/06	0.000	13.708	
S/W Development/Integration/Test	C/CPFF	AM, MD	5.782					1.090	02/06	1.250	11/06	0.000	8.122	
S/W Development/Integration/Test	C/CPFF	GD-AIS, VA	10.461			5.865	02/05					0.000	16.326	
S/W Development/Integration/Test	C/CPFF	JHU/APL, MD	9.467			0.374	12/04					Continuing	Continuing	
S/W Development/Integration/Test	C/CPAF	LOCKHEED MARTIN, NY	58.011			5.054	11/04	0.200	02/06			0.000	63.265	
S/W Development/Integration/Test	C/CPAF	TBD, TBD (FY07 Award)	0.000							0.700	11/06	Continuing	Continuing	
S/W TDA Support	WX	NAVSEA/DAHLGREN, VA	8.957			0.363	10/04	0.050	11/05	0.200	10/06	Continuing	Continuing	
S/W TDA Support	WX	NAVSEA/NEWPORT, RI	29.532			0.481	11/04	0.100	11/05	0.400	10/06	Continuing	Continuing	
S/W Dev./Integration/Test/Support	Var.	Var.	37.144			2.319	10/04	0.051	11/05	0.225	10/06	Continuing	Continuing	
Subtotal Product Development			169.839			16.112		2.233		3.600		Continuing	Continuing	
Remarks:														
Engineering & Tech. Svcs (ETS)	Var.	Var.	0.900									0.000	0.900	
Studies, Analyses & Eval. (SAE)	Var.	Var.	1.500									0.000	1.500	
Subtotal Support			2.400	0.000		0.000		0.000		0.000		0.000	2.400	
Remarks:														

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-07**
PROGRAM ELEMENT: 0205620N Surface ASW Combat System Integration
PROJECT NUMBER AND NAME: 1916 Surface ASW Systems Improvements

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Operational Test Conduct/Support	WX	COMOPTEVFOR, VA	0.833			1.826	12/04					0.000	2.659	
DT/OT Test Conduct/Support	WX	NAVSEA/NEWPORT, RI	5.681									0.000	5.681	
IV&V/SAT/TEMP Assess./Update	WX	NAVSEA/NEWPORT, RI	3.422			0.390	10/04	0.268	11/05	0.275	10/06	Continuing	Continuing	
DT/OT/Miscellaneous T&E	Var.	Var.	1.039			0.070	10/04	0.132	11/05	0.175	10/06	Continuing	Continuing	
Subtotal T&E			10.975			2.286		0.400		0.450		Continuing	Continuing	
Remarks:														
Program Management Support	CPAF	BAE Systems, MD	7.216			0.416	10/04	0.424	12/05	0.433	10/06	Continuing	Continuing	
Program Office Travel	PD	NAVSEA PEO IWS5, DC	1.454			0.150	10/04	0.150	11/05	0.150	10/06	Continuing	Continuing	
Subtotal Management			8.670			0.566		0.574		0.583		Continuing	Continuing	
Remarks:														
Total Cost			191.884	0.000		18.964		3.207		4.633		Continuing	Continuing	
Remarks:														

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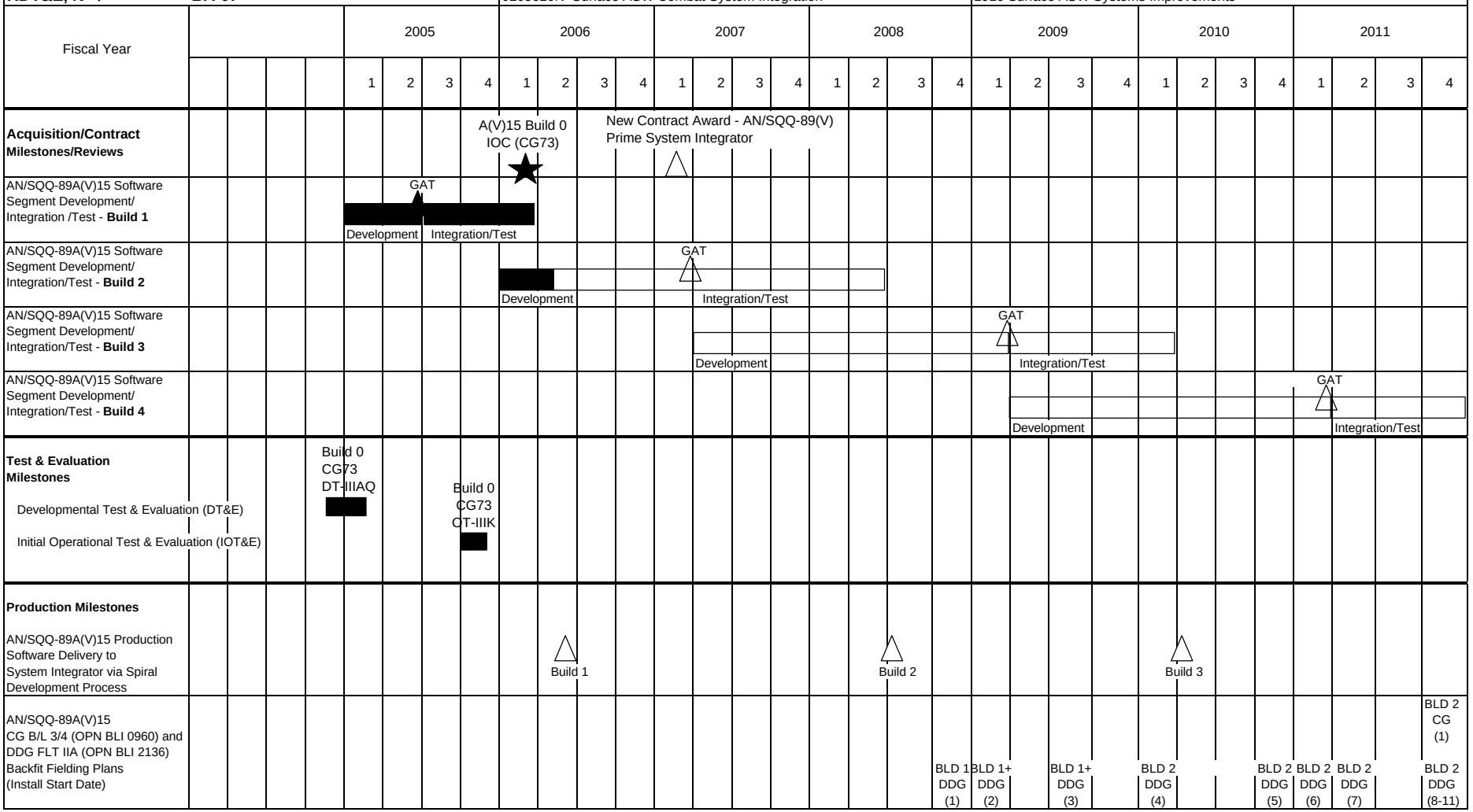
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2006**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-07**

PROGRAM ELEMENT NUMBER AND NAME: 0205620N Surface ASW Combat System Integration

PROJECT NUMBER AND NAME: 1916 Surface ASW Systems Improvements



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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **FEBRUARY 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-07**	PROGRAM ELEMENT 0205620N Surface ASW Combat System Integration				PROJECT NUMBER AND NAME 1916 Surface ASW Systems Improvements			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Build 0 Developmental Test & Evaluation DT-IIIAQ (CG73)		1Q						
Build 0 Initial Operational Test & Evaluation OT-IIIK (CG73)		4Q						
Build 0 Initial Operational Capability (IOC) (CG73)			1Q					
Build 1 S/W Segment Development		1Q-2Q						
Build 1 S/W Segment GAT		2Q						
Build 1 S/W Segment Integration/Test		3Q-4Q	1Q					
Build 1 Production S/W Delivery to System Integrator			2Q					
Build 2 S/W Segment Development			1Q-4Q	1Q				
Build 2 S/W Segment GAT				1Q				
Build 2 S/W Segment Integration/Test				2Q-4Q	1Q-2Q			
Build 2 Production S/W Delivery to System Integrator					3Q			
Build 3 S/W Segment Development				2Q-4Q	1Q-4Q	1Q		
Build 3 S/W Segment GAT						1Q		
Build 3 S/W Segment Integration/Test						2Q-4Q	1Q	
Build 3 Production S/W Delivery to System Integrator							2Q	
Build 4 S/W Segment Development						2Q-4Q	1Q-4Q	1Q
Build 4 S/W Segment GAT								1Q
Build 4 S/W Segment Integration/Test								2Q-4Q
New Contract Award - AN/SQQ-89(V) Prime System Integrator				1Q				
DDG51 Class FLT IIA Backfit Install (Build 1)(Ship 1)					4Q			
DDG51 Class FLT IIA Backfit Install (Build 1+)(Ships 2,3)						1Q, 3Q		
DDG51 Class FLT IIA Backfit Install (Build 2)(Ships 4,5)							1Q, 4Q	
DDG51 Class FLT IIA Backfit Install (Build 2)(Ships 6,7,8,9,10,11)								1Q-2Q, 4Q
CG47 Class B/L 3/4 Backfit Install (Build 2)(Ship 1)								4Q

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	1916C Surface ASW Systems Improvements Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
1916C				
Surface Ship ASW R&D Improvements	4.000			

FY06: (Congressional Add) Continue the development of Surface Ship ASW improvements through use of portable, modular software to ease transition to new families of COTS hardware and low cost incorporation of improved processing algorithms. Address critical surface sonar capability shortfalls such as: active processing in littoral areas, torpedo defense, and automation technology for reduced manning by using the Advanced Processing Builds (APB) model that has rapidly delivered transformational modernization through exploitation of application reuse and low cost incorporation of improved processing algorithms.

	FY 06			
1916C				
Common Surface and Air Undersea Warfare	2.100			

FY06: (Congressional Add) Continue the Air and Surface Ship Peer Review Process integration approach using an Open Architecture (OA) system to develop and test a single “Best of Breed” Common Airborne Undersea Sensor Software (CAUSS) processing baseline that will be used by all USW sonobuoy communities. This capability will be demonstrated using network based, mainstream technology, to evaluate increased USW situational awareness, accuracy, and reduced USW prosecution time through automated fusion and connectivity of shipboard USW and airborne sensor data contacts.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-07	0205620N Surface ASW Combat System Integration	9795N Surf Ship Sonar Integrated Data Fusion Congressional Plus-Ups : VARIOUS

CONGRESSIONAL PLUS-UPS:

	FY 06			
9795N				
Surface Ship Sonar Integrated Data Fusion	2.200			

FY06: (Congressional Add) Develop, test and evaluate an integrated sonar data fusion and display capability for Surface Ship USW Combat Systems.