CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **FEBRUARY 2005**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-07**					R-1 ITEM NOMENCLATURE 0205620N Surface ASW Combat System Integration			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**22.599**	**20.860**	**4.519**	**9.980**	**10.404**	**10.586**	**10.765**	**11.003**
0896 / AN/SQQ-89 Modifications	**0.000**	**0.000**	**1.263**	**5.149**	**5.302**	**5.380**	**5.454**	**5.568**
1916 / Surface ASW Systems Improvements	**22.599**	**19.387**	**3.256**	**4.831**	**5.102**	**5.206**	**5.311**	**5.435**
9627 / Marine Mammal Detection and Mitigation	**0.000**	**1.473**	**0.000**	**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 as well as quickly and affordably develop and integrate emergent transformational technologies.

Project 0896 focuses on the identifcation, 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 Navywide. 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) intiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar bistatics (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. Additionally, via a spiral development process, this Project will continue to capitalize on the Open System Architecture of the AN/SQQ-89A(V)15 and ARCI-type initiatives. 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.

Project 9627 (established via FY 2005 Marine Mammal Detection and Mitigation (MMDM) Congressional Add) will 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 or ship's captain, e.g., cease sonar operations, maneuver the vessel, etc.

Defense Emergency Response Funds (DERF) Funds:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2005**	
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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**0.000**	**1.263**	**5.149**	**5.302**	**5.380**	**5.454**	**5.568**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The AN/SQQ-89 Modifications Project will focus on the identifcation, 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 Navywide. 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 technolgogies are identified.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 04	FY 05	FY 06	FY 07
Identification and Integration of ASW Technologies Into AN/SQQ-89(V) Surface USW Combat System			1.263	4.649
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 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 DDG51 class ships as part of SIPS software updates. Successful software will also be passed on to the AN/SQQ-89(V) prime integrator as part of the PRP build-test-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 04	FY 05	FY 06	FY 07
At-Sea Testing of Select ASW Technologies				0.500
RDT&E Articles Quantity				

FY07: Coordinate and conduct at-sea test of select emergent, significant ASW technologies. Assess results.

	FY 04	FY 05	FY 06	FY 07
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 2004	FY 2005	FY 2006	FY 2007
FY05 President's Budget	0.000	0.000	1.259	5.321
FY06 President's Budget	0.000	0.000	1.263	5.149
Total Adjustments	0.000	0.000	0.004	-0.172
Summary of Adjustments				
Other Misc. Adjustments			0.004	-0.172
Subtotal	0.000	0.000	0.004	-0.172

Schedule:

None

Technical:

None

R-1 SHOPPING LIST - Item No. 180

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 2004	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	16.2	11.0	25.5	37.7	37.5	98.9	93.3	106.2	Continuing	Continuing
RDT&E PE 0603553N/ Surface ASW	11.6	17.5	17.3	18.0	18.6	19.0	19.5	19.9	Continuing	Continuing

E. ACQUISITION STRATEGY:

- Identify, test, integrate and deliver promising evolutionary and transformational technologies to AN/SQQ-89(V) prime integrator at select intervals.
- Award new, competitive contract for AN/SQQ-89(V) prime vendor/integrator in FY 2007.

F. MAJOR PERFORMERS:

- Advanced Acoustic Concepts (AAC), NY.
- Applied Hydro-Acoustics Research (AHA), MD.
- General Dynamics-AIS (formerly DSR), VA.
- Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD.
- Lockheed Martin, NY - Prime AN/SQQ-89(V) 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 2005				
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 04 Cost	FY 04 Award Date	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
Primary H/W & S/W Development	C/CPFF	AAC, NY	0.000					0.185	11/05	0.765	11/06	Continuing	Continuing	
Primary H/W & S/W Development	C/CPAF	AHA, MD	0.000					0.125	11/05	0.520	11/06	Continuing	Continuing	
Primary H/W & S/W Development	C/CPFF	GD-AIS, VA	0.000					0.125	12/05	0.520	12/06	Continuing	Continuing	
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	0.000					0.150	12/05	0.475	12/06	Continuing	Continuing	
Primary H/W & S/W Development	C/CPAF	LOCKHEED MARTIN, NY	0.000					0.215	11/05			0.000	0.215	
Primary H/W & S/W Development	C/CPAF	TBD, TBD (FY07 Award)	0.000							0.638	11/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA/DAHLGREN, VA	0.000					0.100	10/05	0.467	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA/NEWPORT, RI	0.000					0.100	10/05	0.467	10/06	Continuing	Continuing	
Primary H/W & S/W Development	Var.	Var.	0.000					0.099	10/05	0.630	10/06	Continuing	Continuing	
Subtotal Product Development			0.000	0.000		0.000		1.099		4.482		Continuing	Continuing	

Remarks:
Budgeted for award fees ($M): 0.019 in FY06 (Lockheed Martin, NY). Lockheed Martin's performance has been excellent, earning close to 100% of possible award fee for the most recent award fee periods.

Subtotal Support			0.000	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 2005**				
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 04 Cost	FY 04 Award Date	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							0.500	10/06	Continuing	Continuing	
Subtotal T&E			0.000	0.000		0.000		0.000		0.500		Continuing	Continuing	
Remarks:														
Program Management Support	Var.	Var.	0.000					0.164	10/05	0.167	10/06	Continuing	Continuing	
			0.000	0.000		0.000		0.164		0.167		Continuing	Continuing	
Remarks:														
Total Cost			0.000	0.000		0.000		1.263		5.149		Continuing	Continuing	
Remarks:														

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2005**

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	2004				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	1	2	3	4
Acquisition/Contract Milestones/Reviews													New Contract Award - AN/SQQ-89(V) Prime Vendor/Integrator △																			
Identification of Promising ASW Technologies for Test/ Integration									▭																							
Select Technologies for Integration Into AN/SQQ-89(V) Adjunct Systems													▭																			
Integration of Select Technologies Into AN/SQQ-89(V) Adjunct Systems for At-Sea Test															△			△					△				△				△	
Complete Integration of Successful Technologies for Installation via S/W Upgrades on Adjuncts and A(V)15																		△			△				△				△			
Test & Evaluation Milestones At-Sea Test and Evaluation of Select Technologies on AN/SQQ-89(V) Adjunct Systems															▭					▭				▭				▭				▭
Production Milestones Delivery to AN/SQQ-89(V) SIPS Adjunct Program																		△			△				△				△			
Delivery to AN/SQQ-89A(V)15 Spiral Development Program																					△								△			

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2005		
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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Identification of Promising ASW Technologies			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Select Technologies for Integration into AN/SQQ-89(V)				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
New Contract Award				1Q				
Integration Into SQQ-89 Adjunct Systems for At-Sea Test				3Q				
At-Sea Test				4Q				
Complete Integration of Successful Technologies					2Q			
Delivery to AN/SQQ-89(V) SIPS Adjunct Program					2Q			
Integration Into SQQ-89 Adjunct Systems for At-Sea Test					3Q			
At-Sea Test					4Q			
Complete Integration of Successful Technologies						1Q		
Delivery to AN/SQQ-89(V) SIPS Adjunct Program						1Q		
Delivery to AN/SQQ-89A(V)15 Spiral Development Program						1Q		
Integration Into SQQ-89 Adjunct Systems for At-Sea Test						3Q		
At-Sea Test						4Q		
Complete Integration of Successful Technologies							1Q	
Delivery to AN/SQQ-89(V) SIPS Adjunct Program							1Q	
Integration Into SQQ-89 Adjunct Systems for At-Sea Test							3Q	
At-Sea Test							4Q	
Complete Integration of Successful Technologies								1Q
Delivery to AN/SQQ-89(V) SIPS Adjunct Program								1Q
Delivery to AN/SQQ-89A(V)15 Spiral Development Program								1Q
Integration Into SQQ-89 Adjunct Systems for At-Sea Test								3Q
At-Sea Test								4Q

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2005**	
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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**22.599**	**19.387**	**3.256**	**4.831**	**5.102**	**5.206**	**5.311**	**5.435**
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) intiatives to develop and integrate a Multi-Function Towed Array (MFTA) with active sonar bistatics (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 contracted for the procurement of the AN/SQQ-89A(V)15 Pre-Production Prototype in FY 2003 and subsequent installation (on CG73) in FY 2004, and will finance the Developmental and Initial Operational Test & Evaluation events scheduled in FY 2004 and FY 2005 respectively.

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 process by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral and reduce 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.

This PE reflects a Congressional Add in FY 2004 and FY 2005 under Project 1916 for 'Surface Ship ASW R&D Improvements'. Funds will be used to complete the development of promising technologies for at-sea tests in representative warfighting environments. Once satisfactorily tested, technologies will be transitioned to variants of the AN/SQQ-89(V) USW Combat System. Funding will be used to continue continue the development of Surface Ship ASW improvements through portable, modular software to ease transition to new families of COTS hardware and low cost incorporation of improved processing algorithms.

This PE reflects a Congressional Add in FY 2004 and FY 2005 under Project 1916 for 'Common Surface and Air Undersea Warfare'. Once the Peer Review team determines which legacy equipment to replace/upgrade, funds will be used to develop the Common Surface and Air USW integration system baseline that will be integrated and installed on a DDG51 class ship for testing and evaluation. 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 04	FY 05	FY 06	FY 07
Surface Ship ASW R&D Improvements	9.969	7.365		
RDT&E Articles Quantity				

FY04: Reflects Congressional Add for 'Surface Ship ASW R&D Improvements' to complete the development of promising technologies for at-sea tests in representative warfighting environments. Once satisfactorily tested, technologies were identified for transitioning to variants of the AN/SQQ-89(V) USW Combat System. FY05: 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 04	FY 05	FY 06	FY 07
Common Surface and Air Undersea Warfare	0.974	1.375		
RDT&E Articles Quantity				

FY04: Reflects Congressional Add for 'Common Surface and Air Undersea Warfare' to develop the Common Surface and Air Undersea Warfare integration system baseline that was integrated and installed on a DDG51 class ship for testing and evaluation. FY05: 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.

	FY 04	FY 05	FY 06	FY 07
AN/SQQ-89A(V)15 Delivery and Installation	1.486			
RDT&E Articles Quantity				

FY04: Contracted for installation of AN/SQQ-89A(V)15 Pre-Production Prototype on CG73, provide associated Installation Checkout (INCO) support.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 04	FY 05	FY 06	FY 07
LAMPS Mk III Blk II CAUSS & Ku Band Integration	0.586	0.500		
RDT&E Articles Quantity				

FY04-05: Continue 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.

	FY 04	FY 05	FY 06	FY 07
AN/SQQ-89(V) Test & Evaluation Program	0.519	0.690	0.600	0.700
RDT&E Articles Quantity				

FY04-07: Provide AN/SQQ-89(V) test and evaluation planning support, update Test & Evaluation Master Plan (TEMP) to reflect AN/SQQ-89A(V)15 test 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 04	FY 05	FY 06	FY 07
AN/SQQ-89A(V)15 At-Sea Testing	2.350	2.110		0.700
RDT&E Articles Quantity				

FY04: Coordinated and conducted Developmental Test DT-IIIAQ of the SQQ-89A(V)15 Pre-Production Prototype and coordinated plan for FY 2005 Initial Operational Test & Evaluation OT-IIIK. Began to resolve issues that arose from FY04 DT-IIIAQ.
FY05: Complete resolution of issues that arose from FY04 DT-IIIAQ. Coordinate and conduct Initial Operational Test & Evaluation OT-IIIK of the AN/SQQ-89A(V)15 Pre-Production Prototype system. Resolve remaining delta issues that arose from FY05 OT-IIIK.
FY07: Coordinate and conduct at-sea demonstration and subsequent combined Developmental/Operational Test of AN/SQQ-89A(V)15 Build 1. Resolve any issues that arise.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 04	FY 05	FY 06	FY 07
Enhance SQQ-89A(V)15 Open System Architecture	6.715	7.347	2.656	3.431
RDT&E Articles Quantity				

FY04-05: 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).
FY05-07: Develop 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, and development of improved torpedo detection algorithms to be incorporated into the Torpedo Recognition and Alertment Functional Segment (TRAFS) for Build 1 delivery to CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs.

	FY 04	FY 05	FY 06	FY 07
RDT&E Articles Quantity				

	FY 04	FY 05	FY 06	FY 07
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 2004	FY 2005	FY 2006	FY 2007
FY05 President's Budget	23.118	10.612	3.519	4.913
FY06 President's Budget	22.599	19.387	3.256	4.831
Total Adjustments	-0.519	8.775	-0.263	-0.082
Summary of Adjustments				
Congressional undistributed reductions		-0.125		
SBIR/STTR Transfer	-0.479			
Economic Assumptions	-0.010			
Other Misc. Adjustments	-0.030		-0.263	-0.082
Congressional increases		8.900		
Subtotal	-0.519	8.775	-0.263	-0.082

Schedule:

None

Technical:

None

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2005**
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 2004	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	16.2	11.0	25.5	37.7	37.5	98.9	93.3	106.2	Continuing	Continuing
OPN BLI 0960/ Cruiser Modernization										
SCN BLI 2122/ DDG-51										

E. ACQUISITION STRATEGY:

- Completed AN/SQQ-89A(V)15 Pre-Production Prototype 1Q FY 2004, performed installation 3Q FY 2004, conducted 4Q FY 2004-1Q FY 2005 developmental test, and will conduct initial operational test 3Q FY 2005. Via spiral development process, incorporate evolutionary and transformational technologies into AN/SQQ-89(V) systems at scheduled intervals.
- Award new, competitive contract for AN/SQQ-89(V) prime vendor/integrator in FY 2007.

F. MAJOR PERFORMERS:

- Advanced Acoustic Concepts (AAC), NY - SBIR Phase III contract for common acoustic procesor, prime contractor for FY 2004/2005 Congressional Adds for 'Common Surface and Air Undersea Warfare'
- Applied Hydro-Acoustics Research (AHA), MD - SBIR Phase III contract for common acoustic processor and beamformer processing for MFTA.
- General Dynamics-AIS (formerly DSR), VA - SBIR Phase III contract for common acoustic processor, prime contractor for FY 2004/2005 Congressional Adds for 'Surface Ship ASW R&D Improvements' 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) Production and Design Agent. This contract was competitively awarded in May 2002.
- 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.

R-1 SHOPPING LIST - Item No. 180

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **FEBRUARY 2005**

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 04 Cost	FY 04 Award Date	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
Primary H/W & S/W Development	C/CPFF	AAC, NY	10.132	0.353	01/04	1.596	12/04	0.150	11/05			0.000	12.231	
Primary H/W & S/W Development	C/CPFF	AHA, MD	5.674	0.108	02/04							0.000	5.782	
Primary H/W & S/W Development	C/CPFF	GD-AIS, VA	6.138	4.323	02/04	7.365	02/05					0.000	17.826	
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	8.938	0.529	01/04	0.155	12/04	0.155	12/05	0.155	12/06	Continuing	Continuing	
Primary H/W & S/W Development	C/CPAF	LOCKHEED MARTIN, NY	48.528	9.483	11/03	3.622	11/04	0.500	11/05			0.000	62.133	
Primary H/W & S/W Development	C/CPAF	TBD, TBD (FY07 Award)	0.000							1.050	11/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA/DAHLGREN, VA	8.529	0.428	11/03	0.641	10/04	0.450	10/05	0.505	10/06	Continuing	Continuing	
Primary H/W & S/W Development	WX	NAVSEA/NEWPORT, RI	28.701	0.831	11/03	1.043	11/04	0.884	10/05	0.900	10/06	Continuing	Continuing	
Primary H/W & S/W Development	Var.	Var.	33.709	3.435	10/03	1.919	10/04	0.264	10/05	0.561	10/06	Continuing	Continuing	
Subtotal Product Development			150.349	19.490		16.341		2.403		3.171		Continuing	Continuing	

Remarks:
Budgeted for award fees ($M): 0.308 in FY04, 0.230 in FY05, 0.032 in FY06 (Lockheed Martin, NY). Lockheed Martin's performance has been excellent, earning close to 100% of possible award fee for the most recent award fee periods.

Engineering & Technical Svcs (ETS)	Var.	Var.	0.900									0.000	0.900	
Studies, Analyses & Evaluation (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 2005**

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 04 Cost	FY 04 Award Date	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
Developmental & Operational T&E	WX	NAVSEA/NEWPORT, RI	3.331	2.350	11/03					0.700	10/06	Continuing	Continuing	
Developmental & Operational T&E	RX/WX	COMOPTEVFOR, VA	0.833			2.040	12/04					0.000	2.873	
Developmental & Operational T&E	WX	NAVSEA/DAHLGREN, VA	0.000			0.070	10/04					0.000	0.070	
Miscellaneous T&E	Var.	Var.	4.242	0.219	11/03	0.390	10/04	0.300	10/05	0.400	10/06	Continuing	Continuing	
Subtotal T&E			8.406	2.569		2.500		0.300		1.100		Continuing	Continuing	

Remarks:

Program Management Support	Var.	Var.	6.826	0.390	10/03	0.396	10/04	0.403	10/05	0.410	10/06	Continuing	Continuing	
Travel	Var.	Var.	1.304	0.150	10/03	0.150	10/04	0.150	10/05	0.150	10/06	Continuing	Continuing	
			8.130	0.540		0.546		0.553		0.560		Continuing	Continuing	

Remarks:

Total Cost			169.285	22.599		19.387		3.256		4.831		Continuing	Continuing	

Remarks:

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **FEBRUARY 2005**

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

Fiscal Year	2004				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	1	2	3	4
Acquisition/Contract Milestones/Reviews							A(V)15 IOC (CG73)						New Contract Award - AN/SQQ-89(V) Prime Vendor/Integrator																			
AN/SQQ-89A(V)15 Pre-Prdtn Prototype Phase																																
AN/SQQ-89A(V)15 Functional System Development Government Acceptance Test (GAT)		SQT																														
AN/SQQ-89A(V)15 Pre-Prdtn Prototype Delivery	Assembly & Test	Delivery		Installation on CG73																												
AN/SQQ-89A(V)15 Software Delivery to System Integrator via Spiral Development Process													Build 1								Build 2								Build 3			
Test & Evaluation Milestones																																
Developmental Test & Evaluation	TRR			CG73 DT-IIIAQ			CG73 OT-IIIK						Build 1 At-Sea Demo								Build 2 At-Sea Demo								Build 3 At-Sea Demo			
Initial Operational Test & Evaluation															Build 1 At-Sea Test							Build 2 At-Sea Test								Build 3 At-Sea Test		
Combined Developmental/Operational Test & Evaluation																																
Production Milestones				PRR																												
Installations - OPN BLI 2136 (DDG FLT IIA Backfit)																	DDG (1)					DDG (2)	DDG (3)			DDG (4)	DDG (5)			DDG (6,7)	DDG (8,9)	DDG (10,11)

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: FEBRUARY 2005			
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 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Pre-Production Prototype Test	1Q							
Test Readiness Review (TRR)	1Q							
System Qualification Test (SQT)	2Q							
Pre-Production Prototype Final Delivery	2Q							
Pre-Production Prototype Installation on CG73	3Q-4Q							
Developmental Test DT-IIIAQ (CG73)	4Q	1Q						
Preproduction Readiness Review (PRR)	4Q							
Initial Operational Test OT-IIIK (CG73)		3Q						
Initial Operational Capability (IOC) (CG73)		4Q						
New Contract Award				1Q				
Spiral Development S/W / H/W Drop - Build 1				1Q				
Spiral Development At-Sea Demonstration - Build 1				2Q				
Spiral Development Build 1 At-Sea Test				3Q				
Production Delivery to DDG51 Class Ship (1)					1Q			
Spiral Development S/W / H/W Drop - Build 2						1Q		
Production Delivery to DDG51 Class Ship (2,3)						2Q-3Q		
Spiral Development At-Sea Demonstration - Build 2						2Q		
Spiral Development Build 2 At-Sea Test						3Q		
Production Delivery to DDG51 Class Ship (4,5)							2Q-3Q	
Spiral Development S/W / H/W Drop - Build 3								1Q
Production Delivery to DDG51 Class Ships (6,7,8,9,10,11)								2Q-4Q
Spiral Development At-Sea Demonstration - Build 3								2Q
Spiral Development Build 3 At-Sea Test								3Q

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