

**CLASSIFICATION:****UNCLASSIFIED****EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION**

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

**RDTEN/BA 4****0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASUR**

COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	88.432	123.022	76.739				
0260 / REMOTE MINEHUNTING SYSTEMS	8.500	0.000	5.931				
1233 / Surface MCM Mid-life Upgrade	27.470	25.155	21.469				
2094 / Unmanned Underwater Vehicle	12.637	27.053	0.000				
2131 / Assault Breaching System	25.653	43.886	30.871				
3123 / SMCM UUV	7.518	12.610	15.610				
4025 / Expendable Mine Neutralization System	6.654	7.139	2.858				
9179A / Unmanned Undersea Vehicles Near Term Interim Capa	0.000	3.988	0.000				
9967A / AN/SQQ-32 Mine Hunting Sonar Upgrade	0.000	3.191	0.000				

**A. MISSION DESCRIPTION:**

The program provides for developments to combat the threat of known and projected foreign mines against U.S. Naval and merchant shipping in harbors, channels, choke points, sea lines of communications and amphibious and other fleet operating areas. It develops: (1) organic remote minehunting capability for surface platforms; (2) the integration and improvement of systems and support for systems which will detect, localize, classify, and neutralize moored, bottom, and close-tethered mines for use in Mine Countermeasure (MCM) MCM-1 Class and other surface ships; (3) systems for neutralizing mines and light obstacles from shallow water, very shallow water, surf zones, and beach landing craft zones in support of amphibious operations; (4) Unmanned Undersea Vehicle (UUV) systems for clandestine mine reconnaissance.

Congressional plus-up for the Surface Navy Integrated Undersea Tactical Technology (SNIUTT) was used to develop an AN/SQQ-32, AN/AQS-14, AN/AQS-24 and AN/AQS-20A sensor training module for a LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

Congressional plus-up for the ANSQQ-32 Mine Hunting Sonar development for High Frequency Wide Band.

**(U) B. JUSTIFICATION FOR BUDGET ACTIVITY:**

This program is funded under DEMONSTRATION AND VALIDATION because it develops and integrates hardware for experimental testing related to specific ship or aircraft applications.

**CLASSIFICATION:****UNCLASSIFIED****EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)**

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY

**RD TEN/BA 4**

R-1 ITEM NOMENCLATURE

**0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASUR****B. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	89.175	119.164	135.420
FY10 President's Budget	88.432	123.022	76.739
Total Adjustments	-0.743	3.858	-58.681
(U) Summary of Adjustments			
Congressional Rescissions		-0.334	
Congressional Adjustments		7.200	
SBIR/STTR/FTT Assessment	-0.743		
Program Adjustments		-2.935	-57.372
Rate/Misc Adjustments		-0.073	-1.309
Total	-0.743	3.858	-58.681

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<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>					<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>			<b>PROJECT NUMBER AND NAME</b> <b>0260/REMOTE MINEHUNTING SYSTEMS</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	8.500	0.000	5.931				
RDT&E Articles Qty	0	0	0				
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>The AN/WLD-1(V)(1), Remote Minehunting System (RMS), consists of a diesel powered semi-submersible Remote Multi-Mission Vehicle (RMMV) that tows a Variable Depth Sensor (VDS, AN/AQS-20A). It also includes shipboard equipment consisting of a command control combat system, launch and recovery system, radio antennas and support equipment. RMS can operate from the DDG-51 Class Flight IIA ships (DDG-91-96) and Littoral Combat Ships (LCS). The system determines the presence or absence of mines to an acceptable level of confidence to enable ships to operate in or avoid specific areas. Future funding will be used to begin development of emerging technologies for incorporation into the AN/WLD-1(V)(1) Remote Minehunting System and Littoral Combat Ship (LCS) Reconfigurable Mission Capabilities (Multi-Mission - MM).</p>							

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<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>0260/REMOTE MINEHUNTING SYSTEMS</b>	
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	2.500	0.000	3.918
RDT&E Articles Quantity	0	0	0
Product Development:			
FY08: RMMV fixes in support of OPEVAL.			
FY10: Develop Spiral Upgrade - Block 1 which includes Forward Electronic Section, Vehicle Upgrade and Automatic Obstacle Avoidance.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.000	0.000	1.513
RDT&E Articles Quantity	0	0	0
Support:			
FY10: Provide engineering, logistic and programmatic support for RMMV Spiral Upgrade development.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	5.750	0.000	0.000
RDT&E Articles Quantity	0	0	0
T&E:			
FY 08: Conduct DT-IIIE/F in Jul 08 and OPEVAL in Sep 08 on DDG-96.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.250	0.000	0.500
RDT&E Articles Quantity	0	0	0
Management:			
FY 08: Update documentation in support of Full Rate Production Decision Travel.			
FY10: Provide program management and travel for RMMV Spiral Upgrade development.			

**CLASSIFICATION:** UNCLASSIFIED

**EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)** DATE  
May 2009

**APPROPRIATION/BUDGET ACTIVITY** PROGRAM ELEMENT NUMBER AND NAME PROJECT NUMBER AND NAME  
**RD TEN/BA 4** **0603502N/SURFACE AND SHALLOW WATER MINE COUNTER** **0260/REMOTE MINEHUNTING SYSTEMS**

**C. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
2622 / OPN (LV064)	14.500	2.820	4.806	22.126
1600 /OPN (LCS MM)	0.000	22.196	22.600	44.796

**D. ACQUISITION STRATEGY:**

The RMS(V)3 focused on a prototype development, and was competitively awarded to Lockheed Martin in August 1996. The RMS(V)4, officially designated the AN/WLD-1(V)(1), was awarded as a sole source contract to Lockheed Martin in 2002. MS C on 1 July 2005 authorized procurement of three (3) LRIPs in FY05. Conducted Operational Assessment in August 2006 to support FY06 (2nd) LRIP Decision. ASN(RDA) approved FY06 (2nd) LRIP up to 4 units. This decision was documented in Acquisition Decision Memorandum (ADM) dated 21 Sep 2006. The Program Decision Memorandum (PDM) authorizing production of LRIP #8, FY08 LRIP Option was issued by ASN(RDA) on 2 Apr 08. An Operational Assessment (OA) was conducted in 4th Qtr FY08.

**E. MAJOR PERFORMERS:**

Major performers are Lockheed Martin, COMOPTEVFOR, NAVSEA and NSWC PC.

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EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU				PROJECT NUMBER AND NAME 0260/REMOTE MINEHUNTING SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Hardware Development & Integration	CPIF	Lockheed Martin	97.283			0.000		0.000			97.283	0.000
Hardware Development & Integration	CPIF	Lockheed Martin	95.993			0.000		0.000			95.993	0.000
Hardware Development & Integration	WX	NSWC, PC	7.140			0.000		0.000			7.140	0.000
Systems Engineering	CPIF	Lockheed Martin	5.465			0.000		0.000			5.465	0.000
Systems Engineering	CPIF	Lockheed Martin	8.986			0.000		3.750	DEC-09		12.736	0.000
Systems Engineering	WX	NSWC, PC	2.185			0.000		0.168	NOV-09		2.353	0.000
Award Fees	CPIF	Lockheed Martin	5.485			0.000		0.000			5.485	0.000
<b>Subtotal Product Development</b>			<b>222.537</b>			<b>0.000</b>		<b>3.918</b>			<b>226.455</b>	<b>0.000</b>
Remarks:												
Software Development	CPIF	Lockheed Martin	7.092			0.000		0.000			7.092	0.000
Software Development	CPIF	Lockheed Martin	6.961			0.000		0.000			6.961	0.000
Software Development	WX	NSWC, PC	2.142			0.000		0.000			2.142	0.000
ILS	CPIF	Lockheed Martin	5.682			0.000		0.000			5.682	0.000
ILS	CPIF	Lockheed Martin	11.404			0.000		0.750	DEC-09		12.154	0.000
ILS	WX	NSWC, PC	3.557			0.000		0.500	NOV-09		4.057	0.000
ILS	Var	Various	1.125			0.000		0.000			1.125	0.000
Ship Integration	CPIF	Lockheed Martin	1.258			0.000		0.000			1.258	0.000
Ship Integration	CPIF	Lockheed Martin	11.938			0.000		0.000			11.938	0.000
Ship Integration	Var	Various	13.451			0.000		0.263	JAN-10		13.714	0.000
<b>Subtotal Support Costs</b>			<b>64.610</b>			<b>0.000</b>		<b>1.513</b>			<b>66.123</b>	<b>0.000</b>
Remarks:												
Developmental Test & Evaluation	CPIF	Lockheed Martin	18.470			0.000		0.000			18.470	0.000
Developmental Test & Evaluation	CPIF	Lockheed Martin	26.359			0.000		0.000			26.359	0.000
Developmental Test & Evaluation	WX	NSWC, PC	10.792			0.000		0.000			10.792	0.000
Developmental Test & Evaluation	WX	COTF	0.360			0.000		0.000			0.360	0.000
Developmental Test & Evaluation	Var	Various	8.252			0.000		0.000			8.252	0.000
<b>Subtotal Test and Evaluation</b>			<b>64.233</b>			<b>0.000</b>		<b>0.000</b>			<b>64.233</b>	<b>0.000</b>

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<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>										DATE May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDTEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>					<b>PROJECT NUMBER AND NAME</b> <b>0260/REMOTE MINEHUNTING SYSTEMS</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Remarks:												
Contractor Engineering Support	CPIF	Lockheed Martin	6.569			0.000		0.000			6.569	0.000
Government Engineering Support	WX	NSWC, PC	22.996			0.000		0.000			22.996	0.000
Government Engineering Support	WX	NSWC, PC	0.137			0.000		0.050	NOV-09		0.187	0.000
Program Management Support	CPFF	CACI	4.583			0.000		0.000			4.583	0.000
Travel	PD	NAVSEA	0.591			0.000		0.050	NOV-09		0.641	0.000
SBIR Assessment	Var	Various	6.361			0.000		0.400	JAN-10		6.761	0.000
<b>Subtotal Management Services</b>			<b>41.237</b>			<b>0.000</b>		<b>0.500</b>			<b>41.737</b>	<b>0.000</b>
Remarks:												
<b>Total Cost</b>			<b>392.617</b>			<b>0.000</b>		<b>5.931</b>			<b>398.548</b>	<b>0.000</b>

**CLASSIFICATION:**

**UNCLASSIFIED**

**EXHIBIT R-4, SCHEDULE PROFILE**

DATE  
May 2009

APPROPRIATION/BUDGET ACTIVITY  
RDTEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME  
0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME  
0260/REMOTE MINEHUNTING SYSTEMS

## AN/WLD-1(V)(1) PROGRAM SCHEDULE

RMS	FY 2008				FY 2009				FY 2010			
	1	2	3	4	1	2	3	4	1	2	3	4
Milestones												
Events												
LRIP Options												
Spiral Upgrades												
Deliveries												
N85 Deliveries												
N86 Deliveries												
Test & Evaluation												
Operations and Maintenance Support												

▲  
FY08 LRIP Option  
(N85)

Spiral  
Upgrade -

▲  
LRIP #3

▲▲▲▲  
LRIPs #4, 5, 6, 7

△  
LRIP #8

DT-I IE/F ▲▲

OPERATIONAL  
ASSESSMENT

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-4a, SCHEDULE DETAIL</b>						DATE May 2009	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERME</b>			<b>PROJECT NUMBER AND NAME</b> <b>0260/REMOTE MINEHUNTING SYSTEMS</b>		
Schedule Profile		FY 2008	FY 2009	FY 2010			
N85 Deliveries		1Q		2Q			
N86 Deliveries		4Q	1Q-2Q				
FY 08 LRIP		3Q					
Spiral Upgrade - Block I				1Q-4Q			
OT-IIB - DDG Opeval		4Q					
DT-II E/F - Techeval		3Q					
Operations and Maintenance Support		1Q-4Q	1Q-4Q	1Q-4Q			

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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>			<b>PROJECT NUMBER AND NAME</b> <b>1233/Surface MCM Mid-life Upgrade</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	27.470	25.155	21.469				
RDT&E Articles Qty	0	0	0				
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>(1) AN/SQQ-32(V)4 High-Frequency, Wide Band (HFVB) is a technology upgrade to the SQQ-32 Towed Body which will incorporate HFVB technology into the detection sonar to address performance deficiencies against new mine threats in the littorals. This upgrade will be installed on MCM-1 Class ships with the SQQ-32(V)3 and will develop new transducer modules, fiber optic cable and modify topside processing and display software. 2) Mine Warfare and Environmental Decision Aids Library (MEDAL) is a software segment on the Global Command and Control System Maritime (GCCS-M). MEDAL provides mine and mine warfare planning and evaluation tools and databases to the MCM Commander. 3) Develop and implement Mine Countermeasures Commander's Estimate of the Situation (MCM CES). 4) Unmanned Surface Sweep System (US3) is a magnetic/acoustic sweep system developed to sweep acoustic/magnetic influence mines from an unmanned surface platform deployed from the Littoral Combat Ship (LCS).</p>							

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<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.364	0.060	0.152
RDT&E Articles Quantity	0	0	0
MCM CES/PRODUCT DEVELOPMENT:			
FY 08: Development of MEDAL EA, Integration of modules of MCM CES Build 0. FY 09 - FY 10: Development of CES functionality in a MEDAL EA environment.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.600	0.100	0.076
RDT&E Articles Quantity	0	0	0
MCM CES/SUPPORT:			
FY08 - FY 10: Oversee technical integration of developed algorithms and models that have demonstrated their effectiveness in reducing the complexity of the MCM planning problem into a manageable set of options depending on the operational objective. Support effort to include communication with activities such as ONR and NSWC-PC to coordinate the incorporation of validated algorithms and models into MEDAL with the CES framework in order to effectively simplify the MCM planning problem for CSG and ESG staffs and therefore provide the speed, agility, adaptability, and flexibility required for modern MCM operations. Validate Fleet usability of Planning on Risk (PoR) module.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.000	0.120	0.127
RDT&E Articles Quantity	0	0	0
MCM CES/TEST AND EVALUATION:			
FY 09: Complete testing of Build 1 with MEDAL EA. FY 10: Conduct integration testing with MEDAL EA v1.			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	0.080	0.020	0.026
RDT&E Articles Quantity	0	0	0
MCM CES/MANAGEMENT:			
FY 08 - FY10: Program management shall include overall technical guidance and leadership for the program. Other ongoing PM support includes oversight of financial and			

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APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>1233/Surface MCM Mid-life Upgrade</b>		
logistics efforts and adequate coordination with MEDAL. Other PM tasking to include briefings, demonstrations, and project planning as required.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	6.201	1.632	2.500	
RDT&E Articles Quantity	0	0	0	
HF WB/PRODUCT DEVELOPMENT:				
FY 08: Fiber optic tow cable for EDM; consoles hardware; shipboard equipment system integration and fiber optic and slip ring integration. Continue design and fabrication efforts; begin laboratory integration, testing and in-water component tests.				
FY 09: Towed body; common navigation console and auxiliary equipment integration.				
FY 10: Began system engineering and requirements analysis for HF WB P3I effort.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	4.198	0.500	0.370	
RDT&E Articles Quantity	0	0	0	
HF WB/SUPPORT:				
FY 08: Complete software requirements and configuration; software integration testings and ILS documentation.				
FY 09: Complete documentation development and ILS documents.				
FY 10: Began software requirements, configuration, and software integration for P3I effort.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.958	2.416	0.100	
RDT&E Articles Quantity	0	0	0	
HF WB/TEST AND EVALUATION:				
FY 08: Cabling testing; system integration lab test; tow cable and slip ring shock test and in water testing.				
FY 09: Complete in water testing; At sea testing; operation assessment and Environmental Qualification testing (EQT).				
FY 10: Perform lab testing for HF WB P3I effort.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.701	0.260	0.158	
RDT&E Articles Quantity	0	0	0	
HF WB/MANAGEMENT:				
FY 08- FY 10: Provide program management support and travel for AN/SQQ-32 High Frequency Wideband (HF WB) Upgrade program.				
	FY 2008	FY 2009	FY 2010	

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<b>Accomplishments/Effort/Subtotal Cost</b>		5.886	6.000	5.168
RDT&E Articles Quantity		0	0	0
MEDAL/PRODUCT DEVELOPMENT: FY 08: Initiate development of Enterprise Architecture (EA) v.1. Complete Iteration 1 and initiate Iteration 2 and 3. FY 09: Complete Iteration 2 and 3. Initiate Iteration 4 and 5. FY 10: Complete Iteration 4 and 5. Complete development and test of EA v1 and initiate development of EA v2. Complete IOC EA v1.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		0.402	0.400	0.463
RDT&E Articles Quantity		0	0	0
MEDAL/SUPPORT: FY 08 - FY 10: Oversee technical integration of developed algorithms and models that have demonstrated their effectiveness with respect to their objectives. Support effort to include communication with activities such as applied labs, government activities, and designated contractors. Assist in providing the speed, agility, adaptability, and flexibility required for modern MCM operations.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		0.250	0.130	1.322
RDT&E Articles Quantity		0	0	0
MEDAL/TEST AND EVALUATION: FY 08: Develop and improvement of MEDAL EA test and evaluation strategy. Conduct Development Test (DT) on Iteration 1. FY 09: Conduct DT on Iteration 2 and 3. FY 10: Conduct DT on Iteration 4 and 5.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		0.570	0.570	0.617
RDT&E Articles Quantity		0	0	0
MEDAL/MANAGEMENT: FY 08 - FY 10: Provide program management support and travel for MEDAL program. Program management shall include overall technical guidance and leadership for the program. Oversight of financial and logistics efforts and coordination with Navy and other DoD organizations and contractors as required to ensure successful execution of the program. As part of the systems engineering element of PM, communicate and coordinate with MIW C4ISR, ICWS, Organic MCM, Mainstreaming MIW, Expeditionary Warfare C4ISR, tactics development, long term planning, Naval Special Clearance Team (NSCT)-1, Assault Breaching Systems of Systems (ABSoS), LCS, and other programs as they relate to MEDAL and MIW Mission Planning, Evaluation, and C4ISR. Other PM tasking to include briefings, demonstrations, and project planning as required.				
		FY 2008	FY 2009	FY 2010

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APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>1233/Surface MCM Mid-life Upgrade</b>		
<b>Accomplishments/Effort/Subtotal Cost</b>		3.498	4.639	2.184
RDT&E Articles Quantity		0	0	0
US3/PRODUCT DEVELOPMENT: FY 08: Delivery of AoA; Initiation of capability production document; system development and demonstration effort. FY 09: Product improvement efforts. Hardware and Software Development for the Unmanned Surface Sweep System (US3). FY 10: Final design changes, documentation updates, developmental testing and operational testing.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		1.897	5.667	3.365
RDT&E Articles Quantity		0	0	0
US3/SUPPORT: FY 08: Engineering support for prototype system and accomplishments of key performance parameters. FY 09: Engineering and ILS support for required documentation to accomplish Milestone C. FY 10: Completion of Milestone C documentation; engineering support for test events. Support for programmatic and logistical documentation.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		0.895	1.398	3.756
RDT&E Articles Quantity		0	0	0
US3/TEST AND EVALUATION: FY 08: Risk Reduction Testing FY 09: CT and DT planning FY 10: Conduct DT testing in 2nd Qtr and OT testing in 3rd Qtr.				
		FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>		0.970	1.243	1.085
RDT&E Articles Quantity		0	0	0
US3/MANAGEMENT: FY 08: Program initiation. FY 09: Program support and management necessary to monitor contractor progress; review system capabilities; monitor cost and schedule; monitor contractor deliverables. FY 10: Complete Milestone C in 4th Qtr; award Low Rate Initial Production (LRIP).				

<b>CLASSIFICATION:</b>	<b>UNCLASSIFIED</b>
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<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION (CONTINUATION)</b>	DATE May 2009
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	<b>PROJECT NUMBER AND NAME</b> <b>1233/Surface MCM Mid-life Upgrade</b>
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**C. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
2622/OPN (LV075/LV078/LV080)	12.070	14.874	42.960	69.904

**D. ACQUISITION STRATEGY:**

HFWB - Naval Surface Warfare Center, Panama City (NSWC, PC) will team with a ARL UT to design and develop the HFWB upgrade to the AN/SQQ-32.

Mine Warfare and Environmental Decision Aids Library (MEDAL) - requirements for MEDAL Builds are generated through a formal requirements process. Requirements conferences gather a list of candidate functions based on a logical sequence to fully implement the overall software architecture. The fleet is presented with a recommended list of candidate capabilities based on this program plan, doctrine, fleet comments, and technology. These capability items are then prioritized by the fleet representatives (coordinated by Commander Mine Warfare Command). The fleet inputs are then consolidated by COMINWARCOM into an overall list which is then presented to Navy leadership for pricing and final selection. The selection is based on price, risk, available funding, and possibly by other program factors (e.g., ensure that MEDAL supports other program delivery schedules). Selection balances immediate needs, long term objectives, technical maturity and other programmatic factors. A verification and validation process is applied to any algorithms, tactics, or models to be incorporated in the software. MEDAL development to include integration of data fusion techniques and incorporation of Data Access Layer (DAL) architecture to meet FORCENet requirements. Acquisition strategy for Mine Countermeasures Commander's Estimate of the situation (MCM CES) is to deliver the software module within MEDAL builds by implementing the CES framework into the MEDAL software.

US3- The Unmanned Surface Sweep (US3) system effort was transferred from ONR to PMS495 in FY07. PMS495 will award an SD&D contract to continue development of the system. It will be capable of sweeping mines in the littoral waters. The SD&D phase will include a Milestone C LRIP decision in FY10.

**E. MAJOR PERFORMERS:**

CLASSIFICATION:		UNCLASSIFIED												
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE					
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RD TEN/BA 4		0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU						1233/Surface MCM Mid-life Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract		
BSP: Develop Bottom Sediment Classifier	WX	NRL	0.258			0.000		0.000			0.258	0.000		
Systems Engineering and Integration	WX	NSWC PC	0.306			0.000		0.000			0.306	0.000		
System Development	WX	NSWC PC	0.373			0.000		0.000			0.373	0.000		
<b>Subtotal Product Development</b>			<b>0.937</b>			<b>0.000</b>		<b>0.000</b>			<b>0.937</b>	<b>0.000</b>		
Remarks:														
Develop Logistics Products	WX	NSWC PC	0.160			0.000		0.000			0.160	0.000		
<b>Subtotal Support Costs</b>			<b>0.160</b>			<b>0.000</b>		<b>0.000</b>			<b>0.160</b>	<b>0.000</b>		
Remarks:														
Program Management Support	CPFF	CACI	0.080			0.000		0.000			0.080	0.000		
Government Engineering Support	WX	NSWC PC	0.090			0.000		0.000			0.090	0.000		
Travel	PD	NAVSEA	0.256			0.000		0.000			0.256	0.000		
<b>Subtotal Management Services</b>			<b>0.426</b>			<b>0.000</b>		<b>0.000</b>			<b>0.426</b>	<b>0.000</b>		
Remarks:														
Systems Engineering	WX	NSWC PC	2.915			0.000		0.000			2.915	0.000		
<b>Subtotal C4I Production Development</b>			<b>2.915</b>			<b>0.000</b>		<b>0.000</b>			<b>2.915</b>	<b>0.000</b>		
Remarks:														
Software Development	CPFF	SAIC	0.350			0.000		0.000			0.350	0.000		
<b>Subtotal C4I Support</b>			<b>0.350</b>			<b>0.000</b>		<b>0.000</b>			<b>0.350</b>	<b>0.000</b>		
Remarks:														
Program Management Support	CPFF	CACI	0.263			0.000		0.000			0.263	0.000		
Travel	PD	NAVSEA	0.084			0.000		0.000			0.084	0.000		
Government Engineering Support	WX	NSWC PC	0.271			0.000		0.000			0.271	0.000		
Program Management Support	Var	Various	0.157			0.000		0.000			0.157	0.000		
SBIR Assessment			0.019			0.000		0.000			0.019	0.000		

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>									<b>DATE</b> May 2009			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>				<b>PROJECT NUMBER AND NAME</b> <b>1233/Surface MCM Mid-life Upgrade</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
<b>Subtotal C4I Management</b>			<b>0.794</b>			<b>0.000</b>		<b>0.000</b>			<b>0.794</b>	<b>0.000</b>
Remarks:												
Systems Engineering	WX	NSWC PC	1.440			0.060	NOV-08	0.152	NOV-09		1.652	0.000
<b>Subtotal MCM CES Product Development</b>			<b>1.440</b>			<b>0.060</b>		<b>0.152</b>			<b>1.652</b>	<b>0.000</b>
Remarks:												
Software Development	CPFF	SAIC	1.269			0.000		0.076	NOV-09		1.345	0.000
<b>Subtotal MCM CES Support</b>			<b>1.269</b>			<b>0.000</b>		<b>0.076</b>			<b>1.345</b>	<b>0.000</b>
Remarks:												
Test and Evaluation	Var	Various	0.100			0.220	NOV-08	0.127	NOV-09		0.447	0.000
<b>Subtotal MCM CES Test and Evaluation</b>			<b>0.100</b>			<b>0.220</b>		<b>0.127</b>			<b>0.447</b>	<b>0.000</b>
Remarks:												
Program Management Support	CPFF	CACI	0.145			0.020	NOV-08	0.026	NOV-09		0.191	0.000
Government Engineering Support	WX	NSWC PC	0.015			0.000		0.000			0.015	0.000
Travel	PD	NSWC PC	0.094			0.000		0.000			0.094	0.000
<b>Subtotal MCM CES Management</b>			<b>0.254</b>			<b>0.020</b>		<b>0.026</b>			<b>0.300</b>	<b>0.000</b>
Remarks:												
Primary Hardware Development	VAR	NSWC PC/ARL UT	14.354			1.232	NOV-08	0.000			15.586	0.000
Primary Hardware Development	WX	ARL-UT	0.000			0.000		0.000			0.000	0.000
Tow Cable Development	VAR	NSWC PC/ARL UT	1.399			0.000		0.000			1.399	0.000
Ship Integration	WX	NSWC PC	1.297			0.400	NOV-08	0.000			1.697	0.000
SYSTEM ENGINEER	VAR	NSWC/ARL UT	0.000			0.000		2.500	NOV-09		2.500	0.000
<b>Subtotal HFWB Product Development</b>			<b>17.050</b>			<b>1.632</b>		<b>2.500</b>			<b>21.182</b>	<b>0.000</b>
Remarks:												

CLASSIFICATION:		UNCLASSIFIED												
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE					
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RD TEN/BA 4		0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU						1233/Surface MCM Mid-life Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract		
HFWB Software Development	WX	NSWC PC/ARL-UT	5.915			0.250	NOV-08	0.300	NOV-09		6.465	0.000		
HFWB Integrated Logistics Support	WX	NSWC PC	2.350			0.250	NOV-08	0.070	NOV-09		2.670	0.000		
<b>Subtotal HFWB Support</b>			<b>8.265</b>			<b>0.500</b>		<b>0.370</b>			<b>9.135</b>	<b>0.000</b>		
Remarks:														
Developmental Test and Evaluation	WX	NSWC PC/ARL-UT	1.483			2.416	NOV-08	0.100	NOV-09		3.999	0.000		
<b>Subtotal HFWB Test and Evaluation</b>			<b>1.483</b>			<b>2.416</b>		<b>0.100</b>			<b>3.999</b>	<b>0.000</b>		
Remarks:														
Program Management Support	Var	Various	0.944			0.150	JAN-09	0.148	JAN-10		1.242	0.000		
Government Engineering Support	WX	NSWC PC	0.650			0.100	NOV-08	0.000			0.750	0.000		
Travel	PD	NAVSEA	0.030			0.010	NOV-08	0.010	NOV-09		0.050	0.000		
<b>Subtotal HFWB Management</b>			<b>1.624</b>			<b>0.260</b>		<b>0.158</b>			<b>2.042</b>	<b>0.000</b>		
Remarks:														
Software Development	CPFF	SAIC	16.853			6.000	NOV-08	5.168	NOV-09		28.021	0.000		
<b>Subtotal MEDAL Product Development</b>			<b>16.853</b>			<b>6.000</b>		<b>5.168</b>			<b>28.021</b>	<b>0.000</b>		
Remarks:														
Software Engineering	WX	SPAWAR	0.364			0.182	NOV-08	0.208	NOV-09		0.754	0.000		
Software Engineering	WX	NSWC PC	0.440			0.218	NOV-08	0.255	NOV-09		0.913	0.000		
<b>Subtotal MEDAL Support</b>			<b>0.804</b>			<b>0.400</b>		<b>0.463</b>			<b>1.667</b>	<b>0.000</b>		
Remarks:														
Test and Evaluation	Var	Various	0.750			0.130	NOV-08	1.322	DEC-09		2.202	0.000		
<b>Subtotal MEDAL Test and Evaluation</b>			<b>0.750</b>			<b>0.130</b>		<b>1.322</b>			<b>2.202</b>	<b>0.000</b>		
Remarks:														
Program Management Support	CPFF	CACI	0.930			0.245	NOV-08	0.265	FEB-10		1.440	0.000		

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE			
									May 2009			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RD TEN/BA 4		0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU					1233/Surface MCM Mid-life Upgrade					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Government Engineering Support	WX	NSWC PC	0.896			0.300	NOV-08	0.327	NOV-09		1.523	0.000
Travel	PD	NAVSEA	0.189			0.025	NOV-08	0.025	NOV-09		0.239	0.000
SBIR Assessment			0.054			0.000		0.000			0.054	0.000
Program Management Support	Var	Various	0.350			0.000		0.000			0.350	0.000
<b>Subtotal MEDAL Management</b>			<b>2.419</b>			<b>0.570</b>		<b>0.617</b>			<b>3.606</b>	<b>0.000</b>
Remarks:												
Product Development	TBD	ITT	3.472			3.455	NOV-08	2.000	DEC-09		8.927	0.000
Product Development	WX	NSWC PC	0.118			1.184	NOV-08	0.184	NOV-09		1.486	0.000
<b>Subtotal US3 Product Development</b>			<b>3.590</b>			<b>4.639</b>		<b>2.184</b>			<b>10.413</b>	<b>0.000</b>
Remarks:												
Engineering	TBD	ITT	0.257			1.477	NOV-08	0.800	DEC-09		2.534	0.000
Integrated Logistics	TBD	ITT	0.205			0.979	NOV-08	0.429	DEC-09		1.613	0.000
Engineering	WX	NSWC PC	1.909			2.071	NOV-08	1.330	NOV-09		5.310	0.000
Integrated Logistics	WX	NSWC PC	0.416			1.140	NOV-08	0.806	NOV-09		2.362	0.000
<b>Subtotal US3 Support</b>			<b>2.787</b>			<b>5.667</b>		<b>3.365</b>			<b>11.819</b>	<b>0.000</b>
Remarks:												
Test and Evaluation	TBD	ITT	0.627			0.559	NOV-08	1.417	DEC-09		2.603	0.000
Test and Evaluation	WX	NSWC PC	0.436			0.839	NOV-08	2.339	NOV-09		3.614	0.000
<b>Subtotal US3 Test and Evaluation</b>			<b>1.063</b>			<b>1.398</b>		<b>3.756</b>			<b>6.217</b>	<b>0.000</b>
Remarks:												
Contractor Management	TBD	ITT	0.323			0.466	NOV-08	0.310	DEC-09		1.099	0.000
Government Management Support	Var	Various	1.178			0.752	NOV-08	0.750	NOV-09		2.680	0.000
Travel	PD	NAVSEA	0.050			0.025	NOV-08	0.025	NOV-09		0.100	0.000
<b>Subtotal US3 Management</b>			<b>1.551</b>			<b>1.243</b>		<b>1.085</b>			<b>3.879</b>	<b>0.000</b>
Remarks:												

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>									<b>DATE</b> May 2009			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>					<b>PROJECT NUMBER AND NAME</b> <b>1233/Surface MCM Mid-life Upgrade</b>					
<b>Cost Categories</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total PY Cost (\$000)</b>			<b>FY 2009 Cost (\$000)</b>	<b>FY 2009 Award Date</b>	<b>FY 2010 Cost (\$000)</b>	<b>FY 2010 Award Date</b>		<b>Total Cost (\$000)</b>	<b>Target Value of Contract</b>
<b>Total Cost</b>			<b>66.884</b>			<b>25.155</b>		<b>21.469</b>			<b>113.508</b>	<b>0.000</b>

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE  
May 2009

APPROPRIATION/BUDGET ACTIVITY  
RD TEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME  
0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME  
1233b/MCM CES

MCM CES Schedule	FY 2008				FY 2009				FY 2010								
	1	2	3	4	1	2	3	4	1	2	3	4					
Events																	
Build 0																	
Development and Test																	
Fleet Trial																	
IOC	▲																
Build 1																	
Development and Test	■	■	■	■	■	■	■	■									
Integration and Test											□						

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY  
RD TEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME  
0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME  
1233c/HFWB Sonar Upgrade

Fiscal Year	2008				2009				2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
HFWB																																
<b>Acquisition Milestones</b>									MS C / FRPD △																							
Development Phase	█																															
P3I Development Phase									P3I																							
<b>Test &amp; Evaluation Milestones</b>																																
Sub-System Integration	█																															
At-Sea Test									▽	▽																						
EQT Testing									▽																							
<b>Production Milestones</b>									Contract Award △				4 Units																			

**CLASSIFICATION:**

**UNCLASSIFIED**

**EXHIBIT R-4, SCHEDULE PROFILE**

**DATE**

May 2009

**APPROPRIATION/BUDGET ACTIVITY**

**RD TEN/BA 4**

**PROGRAM ELEMENT NUMBER AND NAME**

**0603502N/SURFACE AND SHALLOW WATER MINE COUN**

**PROJECT NUMBER AND NAME**

**1233d/MEDAL**

MEDAL	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Events																																
Build 11																																
IOC Enterprise Architecture (EA) v.1																																
Development and Test																																
Integration and Test																																
IOC																																
Development and Integration of GCCS-M 4.x hardware:																																
M-class ships																																
Expeditionary units																																

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY  
RDTEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME  
0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME  
1233e/US3

	FY08				FY09				FY10																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
Program Milestones									MS C	◇																						
Contracting Events	△																															
Major Test Events									DT	△	△	OT																				
System Development	SD&D Contract																															
LRIP Production																																
Full Rate Production																																

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-4a, SCHEDULE DETAIL</b>						DATE May 2009	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERME</b>			<b>PROJECT NUMBER AND NAME</b> <b>1233/Surface MCM Mid-life Upgrade</b>		
Schedule Profile		FY 2008	FY 2009	FY 2010			
MCM CES: Build 0 IOC		1Q					
MCM CES: Build 1 Development and Test		1Q-4Q	1Q-4Q				
MCM CES: Build 1 Integration and Test				3Q-4Q			
HFWB: Design		1Q-2Q					
HFWB: Milestone C/FRPD				1Q			
HFWB: Subsystem Integration		1Q-4Q	1Q-2Q				
HFWB: At-SEA Test			3Q-4Q				
HFWB: EQT Testing			4Q				
HFWB: Contract Award				2Q			
HFWB: Full Rate Production				2Q-4Q			
HFWB: P3I Development				1Q-4Q			
MEDAL: Build 11 IOC		1Q					
MEDAL: Enterprise Arch (EA) v.1 Development and Test		1Q-4Q	1Q-4Q	1Q-3Q			
MEDAL: EA v.1 Integration and Test				4Q			
MEDAL: Dev. & Integration of GCCS hardware: MCM Class		2Q-4Q					
MEDAL: Dev. & Integration of GCCS hardware: Expeditionary Units		2Q-4Q					
US3: Milestone C				4Q			
US3: Development Contract Award		1Q-2Q					
US3: DT Testing				2Q			
US3: OT Testing				3Q			
US3: SD&D Contract		2Q-4Q	1Q-4Q	1Q-4Q			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>					<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>			<b>PROJECT NUMBER AND NAME</b> <b>2094/Unmanned Underwater Vehicle</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	12.637	27.053	0.000				
RDT&E Articles Qty	0	0	0		0	0	0

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The November 2004 UUV Master Plan established Intelligence, Surveillance, and Reconnaissance (ISR), and clandestine Mine Countermeasures (MCM) as top priorities. The Mission Reconfigurable Unmanned Undersea Vehicle System (MRUUVS) will provide these capabilities to the warfighter. The MRUUVS Capability Development Document (CDD) was approved by the Joint Requirements Oversight Council (JROC) in June 2007.

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>	
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>2094/Unmanned Underwater Vehicle</b>	
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	12.637	27.053	0.000
RDT&E Articles Quantity	0	0	0
<p>21" MRUUVS - FY08 - Completed the LMRS Launch and Recovery risk reduction demonstration. Initiate limited Phase I development which will integrate Littoral Precision Underwater Mapping Array (LPUMA) onto two existing LMRS EDM vehicles. Develop the request for proposal with a development contract award planned in the last quarter of FY08.</p> <p>FY09 - Continue integration of LPUMA with in-water testing and a SSN demonstration of limited Phase I systems completing the effort in FY10.</p>			
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>			
N/A			
<b>D. ACQUISITION STRATEGY:</b>			
In FY09, complete the integration of LPUMA into LMRS EDM vehicles and complete integration testing. In early FY10 complete a SSN demonstration at Navy ranges. Prepare for safety certification for installation on-board an attack submarine, and install system on attack submarine for at-sea demonstration of LPUMA mine detection, obstacle avoidance, UUV recovery on board attack submarine, and real-time merging of LPUMA data with submarine High Frequency sensor database for complete battlespace preparation.			
<b>E. MAJOR PERFORMERS:</b>			
Major performers are Boeing and Various other Government activities and contractors.			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>					<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>			<b>PROJECT NUMBER AND NAME</b> <b>2131/Assault Breaching System</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	25.653	43.886	30.871				
RDT&E Articles Qty	0	0	0				
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>This program provides for a combination of U.S. Navy projects planned to counter the threat to amphibious landing forces from known and projected foreign land/sea mines, obstacles in the beach zone and surf zone approaches to amphibious assault areas. The Assault Breaching System (ABS) of Systems (Countermine/Counter Obstacle, Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T), Precision Navigation/Virtual Marking/Integration, C4I/Data Fusion) provides a full assault breaching capability which is an essential element to the Ship To Objective Maneuver (STOM) Concept of Operations.</p> <p>Countermine/Counter Obstacle (CM/CO) -  Far term - Counter Mine System (CMS) - transitioned from a 6.3 S&amp;T Concept Demonstration effort to a 6.4 development program after a concept decision/AoA in FY06.  ISR/T - Coastal Battlefield Reconnaissance and Analysis (COBRA) is the ISR/T part of the ABS of systems. One system consists of two Airborne Payloads and one Post Mission Analysis Station. Under the umbrella of evolutionary acquisition, three increments of development are planned; Block I introduces a daytime, surface laid minefield and obstacle detection capability for the Beach Zone. Blocks II and III will incorporate technology being developed by 6.3.  S&amp;T. Block II adds a surfzone and night (darkness) detection capability. Block III adds a buried mine detection capability and on-board Near-Real-Time processing of Multi Spectral Imagery data.  COBRA will be a modular payload architecture of and integrated with the MQ-8B Fire Scout Vertical Takeoff and Landing Unmanned Aerial Vehicle (VTUAV) and will serve as the "detect" mission module of the Littoral Combat Ship (LCS) Mine Warfare mission package.</p> <p>Precision Navigation/Virtual Marking- The navigation effort involves requirements development and program planning to choose the navigational upgrades for the Landing Craft, Air Cushion (LCAC) and Landing Craft, Utility (LCU), and Amphibious Assault Vehicle (AAV) to enable the craft to safely navigate the neutralized assault lanes. A system of virtual or physical lane marking is to be developed to guide the assault craft through the neutralized assault lanes. OPN will fund the CRAFTALTS to upgrade the navigation systems.  LCU Navigation Upgrade: Modernized the navigation system to enable safe transit through the breached lane.  LCAC Autopilot Upgrade: An integrated improvement to the LCAC (Service Life Extension Program (SLEP) navigation system for craft control that allows precise navigation and hovering within the breached lane. These software upgrades and backfits will occur during scheduled LCAC SLEPs.  AAV Navigation Upgrade : Modernized the navigation system to enable precise transit through the breached lane.</p> <p>Command, Control, Computers, Communications and Intelligence (C4I) - System will tie all of the above systems together under an integrated ABS architecture and also tie in with the integrated Mine Warfare architecture.</p>							

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>		
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>2131/Assault Breaching System</b>		
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	20.406	37.110	24.437	
RDT&E Articles Quantity	0	0	0	
Product Development:				
FY 08: Countermine System Contract Awards; Conduct Contract Kick-off Meetings, System Readiness Reviews, and approve Preliminary Designs for CMS; and procure long-lead time material for AAV Upgrades.				
FY 09: Exercising contract options for CMS and awarding COBRA Block II contract and conducting system technical reviews on COBRA Block II and CMS.				
FY 10: CMS Critical Design Review (CDR); Conduct COBRA Block II Preliminary Design Review (PDR).				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.583	0.999	0.961	
RDT&E Articles Quantity	0	0	0	
Support:				
FY 08: Precision Navigation/Virtual Marking - COTS technical analysis, product integration, market surveys, technical support in installation instructions.				
FY 09: ISR/T - Technical analysis, modeling and simulation.				
FY 10: Conduct Weapon System Explosive Safety Requirements Board (WSESRB) Review; evaluate Flight Certification for Non-Navy Aircraft.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.165	0.206	0.167	
RDT&E Articles Quantity	0	0	0	
Test and Evaluation:				
FY 08: CMS dart testing. Precision Navigation/Virtual Marking - Vehicle/crew compatibility testing, Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I Operational Assessment, Block II and III OPEVAL.				
FY 09: Complete Breaching System Effectiveness Simulation and ABS Effectiveness Tool.				
FY 10: Complete Integrated Test Phase I and II associated with Neutralizer and Sled Tests.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	4.499	5.571	5.306	

<b>CLASSIFICATION:</b>	<b>UNCLASSIFIED</b>
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<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION (CONTINUATION)</b>	DATE May 2009
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<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	<b>PROJECT NUMBER AND NAME</b> <b>2131/Assault Breaching System</b>
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RDT&E Articles Quantity	0	0	0
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Management:  
 FY 08: Analysis of Material approvals and Functional needs analysis/functional solutions analysis.  
 FY 09 - FY 10: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.

**C. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name

Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
OPN 2624	1.437	7.333	7.835	16.605
OPN 1600	0.000	73.684	137.259	210.943
WPN 4221	0.000	2.778	0.000	2.778

**D. ACQUISITION STRATEGY:**

Countermine/Counter Obstacle (CM/CO) is a two phased approach, near term and far term solutions. The near term approach for CMCO is JDAM Assault Breaching System (JABS) and this effort has been completed. The far term solution is CMS, which transitioned from ONR in 2nd QTR 07 followed by MS B decision in 3rd QTR 07 and SD&D contract in 3rd QTR 08.

Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I will achieved MS C in 3rd QTR FY08, COBRA Block II technology will transfer from ONR and achieve MS B between 2nd/3rd QTR FY09.

Precision Navigation/Virtual Marking- The navigation upgrades for the Landing Craft, Air Cushion (LCAC) and Landing Craft, Utility (LCU) are in progress. AAV enhancements will be achieved through an ECP (PMA AAV (Marine Corps)) in 2 QTR 08.

**E. MAJOR PERFORMERS:**

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU				PROJECT NUMBER AND NAME 2131/Assault Breaching System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Primary Hardware Dev, COBRA	WX	Northup Grumman	95.411			7.959	FEB-09	6.893	FEB-10		110.263	0.000
Primary Hardware Dev, CMS	WX	Unknown	16.555			15.980	FEB-09	5.041	FEB-10		37.576	0.000
Ancillary Hardware Dev, JABS	WX	Unknown	9.222			0.000		0.000			9.222	0.000
Systems Engineering, COBRA	WX	NSWC PC	7.378			5.082	NOV-08	4.823	NOV-09		17.283	0.000
Software Dev, COBRA	WX	NAVAIR	6.128			3.518	NOV-08	3.340	NOV-09		12.986	0.000
Systems Engineering, CMS	WX	NSWC IH	20.148			1.921	NOV-08	1.824	NOV-09		23.893	0.000
Training Dev, COBRA	WX	NSWC IH	3.475			0.893	NOV-08	0.848	NOV-09		5.216	0.000
Tooling	WX	NSWC IH	0.860			0.000		0.000			0.860	0.000
ABS IPT/Test Assets/Proj Eng	WX	NSWC IH	5.737			0.380	NOV-08	0.361	NOV-09		6.478	0.000
Precision Navigation & Marking	WX	NSWC IH	1.108			1.377	NOV-08	1.307	NOV-09		3.792	0.000
<b>Subtotal Product Development</b>			<b>166.022</b>			<b>37.110</b>		<b>24.437</b>			<b>227.569</b>	<b>0.000</b>
Remarks:												
Note 1: Hardware contracts (COBRA, CMS, and JABS) will be processed through NSWC Panama City.												
Note 2: Prior Year Cost include both US Marine Corp and US Navy funds.												
Note 3: FY 08 RDT&E Costs are associated with completing COBRA Block I system testing and initiating COBRA Block II contract efforts.												
Note 4: FY 09 RDT&E cost estimates are related to exercising COBRA Block II and CMS contract options.												
Development Support Equipment	WX	NSWC PC	13.406			0.793	NOV-08	0.753	NOV-09		14.952	0.000
Software Development	WX	NSWC PC	8.037			0.000		0.000			8.037	0.000
Integrated Logistics Support	WX	NSWC IH	2.712			0.000		0.000			2.712	0.000
Configuration Management	WX	NSWC PC	3.744			0.000		0.000			3.744	0.000
Technical Data	WX	NSWC PC	2.588			0.000		0.000			2.588	0.000
Studies & Analysis	WX	NSWC PC	4.374			0.206	NOV-08	0.208	NOV-09		4.788	0.000
GFE	WX	NSWC PC	0.400			0.000		0.000			0.400	0.000
<b>Subtotal Support Costs</b>			<b>35.261</b>			<b>0.999</b>		<b>0.961</b>			<b>37.221</b>	<b>0.000</b>
Remarks:												

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>										<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>					<b>PROJECT NUMBER AND NAME</b> <b>2131/Assault Breaching System</b>					
<b>Cost Categories</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total PY Cost (\$000)</b>			<b>FY 2009 Cost (\$000)</b>	<b>FY 2009 Award Date</b>	<b>FY 2010 Cost (\$000)</b>	<b>FY 2010 Award Date</b>		<b>Total Cost (\$000)</b>	<b>Target Value of Contract</b>
Development Test & Evaluation	WX	NSWC IH	29.953			0.206	NOV-08	0.167	NOV-09		30.326	0.000
Operational Test & Evaluation	WX	NSWC IH, PC	8.655			0.000		0.000			8.655	0.000
Tooling	WX	NSWC IH, PC	0.700			0.000		0.000			0.700	0.000
GFE	WX	NSWC IH, PC	0.400			0.000		0.000			0.400	0.000
			0.000			0.000		0.000			0.000	0.000
<b>Subtotal Test and Evaluation</b>			<b>39.708</b>			<b>0.206</b>		<b>0.167</b>		<b>0.000</b>	<b>40.081</b>	<b>0.000</b>
Remarks:												
Contractor Engineering Support	CPFF	CACI, Northrup Grumman	6.246			1.075	NOV-08	1.122	NOV-09		8.443	0.000
Government Engineering Support	WX	NSWC IH	25.995			2.206	NOV-08	2.094	NOV-09		30.295	0.000
Program Management Support	WX	NSWC IH, PC	17.703			2.201	NOV-08	2.090	NOV-09		21.994	0.000
Travel	PD	NAVSEA	1.124			0.089	NOV-08	0.000			1.213	0.000
Assessment/BTR	Various	Various	1.434			0.000		0.000			1.434	0.000
<b>Subtotal Management Services</b>			<b>52.502</b>			<b>5.571</b>		<b>5.306</b>			<b>63.379</b>	<b>0.000</b>
Remarks:												
<b>Total Cost</b>			<b>293.493</b>			<b>43.886</b>		<b>30.871</b>			<b>368.250</b>	<b>0.000</b>

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE  
May 2009

APPROPRIATION/BUDGET ACTIVITY  
RD TEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME  
0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME  
2131/Assault Breaching System

ABS	FY 2008				FY 2009				FY 2010																						
	1	2	3	4	1	2	3	4	1	2	3	4																			
Milestones																															
CMS Acquisition/Development 6.4	[Redacted]												CMS System Development																		
CMS Capabilities Development Document (CDD)	▲ CDD Approved 1st Qtr FY08																														
Countermine System (CMS)	▲ CMS Contract Award												System Design/Platform Integration																		
CMS System Design and Test	[Redacted]																														
Countermine System Technical Reviews	◇ Contract Kickoff				◇ SRR				◇ PDR																						
Navigation/C4I Development													ISR/Nav/C4I System Development																		
COBRA													Production (With Options)																		
Block I													◇ MS C				[Redacted]														
Block II													MS B ◇				[Redacted]														
SD&D Day/Night Capability, Surf/Beach Zones																															

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-4a, SCHEDULE DETAIL</b>						DATE May 2009	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERME</b>			<b>PROJECT NUMBER AND NAME</b> <b>2131/Assault Breaching System</b>		
Schedule Profile		FY 2008	FY 2009	FY 2010			
COBRA Block I Milestone MS C			2Q				
COBRA Block I Procurement			3Q-4Q	1Q-4Q			
COBRA Block II SD&D				1Q-4Q			
COBRA Block II Milestone B			4Q				
CMS System Development		1Q-4Q	1Q-4Q	1Q-4Q			
CMS Contract Award		3Q					
SRR - System Requirements Review			2Q				
PDR - Preliminary Design Review				1Q			
ISR/NAV/C4I Development			1Q-4Q	1Q-4Q			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>					<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEAS</b>			<b>PROJECT NUMBER AND NAME</b> <b>3123/SMCM UUV</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	7.518	12.610	15.610				
RDT&E Articles Qty	0	0	0				
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
<p>The Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) provides for development of Unmanned Underwater Vehicles to support dedicated mine countermeasure operations, including buried mine detection. Equipment includes vehicles and associated systems support equipment. Potential P3I candidates include communications upgrades, on-board sonar processing and target recognition, command and control improvements, and other smaller tasks.</p>							

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>	
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>3123/SMCM UUV</b>	
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
	FY 2008	FY 2009	FY 2010
<b>Accomplishments/Effort/Subtotal Cost</b>	7.518	12.610	15.610
RDT&E Articles Quantity	0	0	0
<p>SMCM UUV - FY08 - Demonstrate operation of a UUV-based capability package for standoff, multiple MCM operations, including buried mine detection, from Littoral Combat Ship (LCS) and craft of opportunity. Continue program management, contract management, logistic support, systems engineering, T&amp;E planning and oversight, ship integration, information assurance, safety, software, and sonarconsultation and operations support. Low Frequency Broadband (LFBB) design and prototyping of critical technology components for demonstration and evaluation.</p> <p>FY09 - Milestone B and development contract award. LFBB development continues in FY09.</p> <p>FY10 - Preliminary Design Review, Critical Design Review preparatioin, begin fabrication of Engineering Development Model.</p>			
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>			
N/A			
<b>D. ACQUISITION STRATEGY:</b>			
An acquisition program will be initiated in FY09 to develop Surface Mine Countermeasure Unmanned Undersea Vehicles (SMCM UUV) equipped with Low Frequency Broadband (LFBB) sonar that provides buried mine detection capability.			
<b>E. MAJOR PERFORMERS:</b>			
Major performers are NSWC Panama City, NUWC Newport, NAVO and various contractors.			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>									<b>DATE</b> May 2009			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>				<b>PROJECT NUMBER AND NAME</b> <b>3123/SMCM UUV</b>						
<b>Cost Categories</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total PY Cost (\$000)</b>			<b>FY 2009 Cost (\$000)</b>	<b>FY 2009 Award Date</b>	<b>FY 2010 Cost (\$000)</b>	<b>FY 2010 Award Date</b>		<b>Total Cost (\$000)</b>	<b>Target Value of Contract</b>
SMCM UOES Development	CPAF	Bluefin, Cambridge, MA	12.544			1.100	DEC-08	0.600	DEC-09		CONT	0.000
SMCM UUV Development	TBD	TBD	2.765			9.729	SEP-09	10.234	DEC-09		CONT	0.000
Software Development	WX	NSWC, Panama City, FL	0.805			0.000		0.000			0.805	0.000
<b>Subtotal Product Development</b>			<b>16.114</b>			<b>10.829</b>		<b>10.834</b>			<b>CONT</b>	<b>0.000</b>
Remarks:												
Engineering Support	WX	NSWC, Panama City, FL	5.223			0.788	DEC-08	2.612	DEC-09		CONT	0.000
Engineering Support	WX	NUWC, Newport, RI	1.487			0.269	DEC-08	0.839	DEC-09		CONT	0.000
Engineering Support	WX	Various	0.030			0.165	DEC-08	0.700	DEC-09		CONT	0.000
<b>Subtotal Support Costs</b>			<b>6.740</b>			<b>1.222</b>		<b>4.151</b>			<b>CONT</b>	<b>0.000</b>
Remarks:												
Developmental Test & Evaluation	WX	NOMWC, Stennis	0.236			0.065	DEC-08	0.066			CONT	0.000
Government T&E Support		Various	0.579			0.189	DEC-08	0.192			CONT	0.000
Test and Evaluation	WX	COMOPTEVFOR	0.085			0.000		0.056	DEC-09		0.141	0.000
<b>Subtotal Test and Evaluation</b>			<b>0.900</b>			<b>0.254</b>		<b>0.314</b>			<b>CONT</b>	<b>0.000</b>
Remarks:												
Program Management Support	CPFF	Various, Wash., DC	0.400			0.255	DEC-08	0.261	DEC-09		0.916	0.000
Travel			0.050			0.050	NOV-08	0.050	NOV-09		0.150	0.000
<b>Subtotal Management Services</b>			<b>0.450</b>			<b>0.305</b>		<b>0.311</b>			<b>1.066</b>	<b>0.000</b>
Remarks:												
<b>Total Cost</b>			<b>24.204</b>			<b>12.610</b>		<b>15.610</b>			<b>CONT</b>	<b>0.000</b>

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-4, SCHEDULE PROFILE

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY

RD TEN/BA 4

PROGRAM ELEMENT NUMBER AND NAME

0603502N/SURFACE AND SHALLOW WATER MINE COUNT

PROJECT NUMBER AND NAME

3123/SMCM UUV

UUV	FY 2008				FY 2009				FY 2010																							
	1	2	3	4	1	2	3	4	1	2	3	4																				
<b>SMCM Shallow &amp; Deep Water UUV</b>																																
Dual Frequency SAS Development																																
Dual Freq SAS Fleet Experimentation																																
LFBB UUV Milestone B																																
LFBB UUV Contract Award																																
LFBB UUV Development																																

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-4a, SCHEDULE DETAIL</b>						DATE May 2009	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERME</b>			<b>PROJECT NUMBER AND NAME</b> <b>3123/SMCM UUV</b>		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Dual Frequency SAS Development		1Q-4Q					
Dual Frequency SAS Fleet Experimentation		4Q	1Q-4Q				
LFBB UUV Milestone B			1Q				
LFBB UUV Contract Award			4Q				
LFBB UUV/LFBB Development			2Q-4Q	1Q-4Q			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>					<b>DATE</b> May 2009		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>			<b>PROJECT NUMBER AND NAME</b> <b>4025/Expendable Mine Neutralization System</b>		
<b>COST (In Millions)</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>				
Project Cost	6.654	7.139	2.858				
RDT&E Articles Qty	0	0	0				
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>							
Expendable Mine Neutralization System (EMNS) is a replacement to the existing AN/SLQ-48 Mine Neutralization System (MNS). The current program replaces the MNS with EMNS on the 14 MCM Avenger Class Ships. EMNS will leverage off of on-going efforts in the Airborne Mine Countermeasures Program to develop an Airborne Mine Neutralization System (AMNS).							

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>		
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>		PROJECT NUMBER AND NAME <b>4025/Expendable Mine Neutralization System</b>	
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	1.444	1.110	0.407	
RDT&E Articles Quantity	0	0	0	
Award Development Contract for Expendable Mine Neutralization System (EMNS) integrator. Initiate hardware design and development to include launcher, control console, and MCM-1 Class ship integration. Modify software for use on an MCM-1 class ship. Integrate EMNS Engineering Development Model (EDM) aboard MCM-1 Class Ship. Award contract for Common Neutralizer support. Provide test articles and technical support throughout EMNS development.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	5.008	3.103	1.188	
RDT&E Articles Quantity	0	0	0	
Develop logistics products, including training materials and interactive technical manual. Provide Engineering support, including review for product development and ship integration.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.000	2.768	0.896	
RDT&E Articles Quantity	0	0	0	
EMNS developmental testing including environmental and shock testing, safety testing, and contractor testing. Develop Test and Evaluation Master Plan (TEMP) and test reports. Conduct DT/OT.				
	FY 2008	FY 2009	FY 2010	
<b>Accomplishments/Effort/Subtotal Cost</b>	0.202	0.158	0.367	
RDT&E Articles Quantity	0	0	0	
Provide program management support and travel for EMNS.				
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>				
Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
OPN 2622:EMNS	0.000	7.218	6.300	13.518
WPN 4225: EMNS	0.000	0.000	7.870	7.870
<b>D. ACQUISITION STRATEGY:</b>				
Based on the approved Common Neutralizer Strategy, the Archerfish neutralizer will be integrated on the MCM-1 Avenger Class Ships. The acquisition strategy will be full and				

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>	
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION (CONTINUATION)</b>			DATE May 2009
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	<b>PROJECT NUMBER AND NAME</b> <b>4025/Expendable Mine Neutralization System</b>	
<p>open competition for non-neutralizer hardware development and system integration with a directed contractual relationship with VCT (flight control software). The Navy awarded a sole source contract to BAE Systems for Common Neutralizer support, integration, and hardware manufacturing/delivery. All EMNS neutralizer equipment and support will be provided by BAE Systems to the Navy. The Navy will provide these assets as GFE to the integration contractor.</p> <p><b>E. MAJOR PERFORMERS:</b> Major performers are various contractors.</p>			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>									<b>DATE</b> May 2009			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDTEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>					<b>PROJECT NUMBER AND NAME</b> <b>4025/Expendable Mine Neutralization System</b>					
<b>Cost Categories</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total PY Cost (\$000)</b>			<b>FY 2009 Cost (\$000)</b>	<b>FY 2009 Award Date</b>	<b>FY 2010 Cost (\$000)</b>	<b>FY 2010 Award Date</b>		<b>Total Cost (\$000)</b>	<b>Target Value of Contract</b>
Develop Technical and Acquisition Documentation	WX	NSWC PC	1.203			0.446	NOV-08	0.407	NOV-09		2.056	0.000
Hardware/Software Delevopment	CPIF	Lockheed Martin, Syr NY	9.521			0.664	NOV-08	0.000	NOV-09		10.185	0.000
Common Neutralizer Development	C/CPIF	Raytheon, Portsmouth RI	2.431			0.000		0.000			2.431	0.000
Deep Water Neutralizer Development	WX	NSWC PC	0.000			0.000		0.000			0.300	0.000
Deep Water Neutralizer Development	CPIF	BAE Systems	0.000			0.000		0.000			3.000	0.000
<b>Subtotal Product Development</b>			<b>13.155</b>			<b>1.110</b>		<b>0.407</b>			<b>17.972</b>	<b>0.000</b>
Remarks:												
Develop Logistics Products	CPIF	Lockheed Martin, Syr NY	1.991			0.650	OCT-08	0.000			2.641	0.000
Develop Logistics Products	WX	NSWC	0.616			0.350	OCT-08	0.000			0.966	0.000
Engineering Support	CPIF	Lockheed Martin, Syr NY	1.557			0.887	OCT-08	0.230	NOV-09		2.674	0.000
Engineering Support	WX	NSWC	5.282			1.216	OCT-08	0.958	NOV-09		7.456	0.000
Deep Water Neutralizer ILS	CPIF	BAE Systemsd	0.000			0.000		0.000			0.252	0.000
Deep Water Neutralizer ILS	WX	NSWC PC	0.000			0.000		0.000			0.186	0.000
Deep Water Neutralizer Engineering	CPIF	BAE Systems	0.000			0.000		0.000			2.200	0.000
Deep Water Neutralizer Engineering	WX	NSWC PC	0.000			0.000		0.000			0.860	0.000
<b>Subtotal Support Costs</b>			<b>9.446</b>			<b>3.103</b>		<b>1.188</b>			<b>17.235</b>	<b>0.000</b>
Remarks:												
Develop TEMP	WX	NSWC PC	0.100			0.000		0.000			0.100	0.000
CT/DT	CPIF	Lockheed Martin, Syr NY	0.000			1.384	OCT-08	0.000			1.384	0.000
CT/DT	WX	NSWC PC	0.000			1.384	OCT-08	0.000			1.384	0.000
Operational Test & Evaluation	WX	COTF Norfolk, VA	0.000			0.000		0.896	OCT-09		0.896	0.000
Common Neutralizer Testing	CPIF	Raytheon, Portsmouth RI	0.000			0.000		0.000			0.000	0.000
Common Neutralizer Test Sets	CPIF	Raytheon, Portsmouth RI	0.000			0.000		0.000			0.000	0.000
Deep Water Neutralizer T&E	CPIF	BAE Systems	0.000			0.000		0.000			0.995	0.000
Deep Water Neutralizer T&E	WX	NSWC PC	0.000			0.000		0.000			2.295	0.000
			0.000			0.000		0.000			0.000	0.000
<b>Subtotal Test and Evaluation</b>			<b>0.100</b>			<b>2.768</b>		<b>0.896</b>			<b>7.054</b>	<b>0.000</b>

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>										
<b>EXHIBIT R-3, RDT&amp;E PROJECT COST ANALYSIS</b>									DATE May 2009			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERMEASU</b>					<b>PROJECT NUMBER AND NAME</b> <b>4025/Expendable Mine Neutralization System</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
Remarks:												
Program Management Support	CPFF	CACI	0.871			0.096	OCT-08	0.327	OCT-09		1.294	0.000
Travel	PD	NAVSEA	0.170			0.062	OCT-08	0.040	OCT-09		0.272	0.000
<b>Subtotal Management Services</b>			<b>1.041</b>			<b>0.158</b>		<b>0.367</b>			<b>1.566</b>	<b>0.000</b>
Remarks:												
<b>Total Cost</b>			<b>23.742</b>			<b>7.139</b>		<b>2.858</b>			<b>43.827</b>	<b>0.000</b>

**CLASSIFICATION:**

**UNCLASSIFIED**

**EXHIBIT R-4, SCHEDULE PROFILE**

DATE  
May 2009

APPROPRIATION/BUDGET ACTIVITY  
**RD TEN/BA 4**

PROGRAM ELEMENT NUMBER AND NAME  
**0603502N/SURFACE AND SHALLOW WATER MINE COUNT**

PROJECT NUMBER AND NAME  
**4025/Expendable Mine Neutralization System**

Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
EMNS													
Acquisition Milestones								MS C △				FRPDR △	
Prototype Phase	E&MD/Development												
EDM Contract Award	▲	Contract Award											
Significant Events		▲	▲				Contractor Testing □						
EDM Deliveries					▲ 1								
Test & Evaluation Milestones								DT □					
Developmental Test (DT)								□					
Operational Test (OT)									OT □				
Production Milestones													
LRIP								LRIP △					
FRP												FRP △	
Deliveries													
LRIP												△	
FRP													

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>					
<b>EXHIBIT R-4a, SCHEDULE DETAIL</b>						DATE May 2009	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RD TEN/BA 4</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b> <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTERME</b>			<b>PROJECT NUMBER AND NAME</b> <b>4025/Expendable Mine Neutralization System</b>		
Schedule Profile		FY 2008	FY 2009	FY 2010			
Contract Award		1Q					
Integration Development		1Q-4Q	1Q-4Q				
Preliminary Design Review		2Q					
Critical Design Review		3Q					
EDM Deliveries			2Q				
Contractor Testing (CT)			3Q				
Milestone C			4Q				
LRIP Start			4Q				
Development Testing (DT)			3Q				
Operational Testing (OT)				2Q			
FDR/PDR				4Q			
FRP Start				4Q			

<b>CLASSIFICATION:</b>		<b>UNCLASSIFIED</b>	
<b>EXHIBIT R-2a, RDT&amp;E PROJECT JUSTIFICATION</b>			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY <b>RD TEN/BA 4</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0603502N/SURFACE AND SHALLOW WATER MINE COUNTER</b>	PROJECT NUMBER AND NAME <b>9999/CONGRESSIONAL ADDS</b>	
<b>B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b>			
	FY 2008	FY 2009	FY 2010
<b>9967A/AN/SQQ-32 Mine Hunting Sonar Upgrade</b>	0.000	3.191	0.000
RDT&E Articles Quantity	0	0	0
Congressional Add to upgrade AN/SQQ-32(V)3 Classification Sonar, and to provide detection transducer development, design and quality sonar operator equipment consoles applicable to High Frequency Wide Band.			
	FY 2008	FY 2009	FY 2010
<b>9179A / Unmanned Undersea Vehicles Near Term Interim Capability</b>	0.000	3.988	0.000
RDT&E Articles Quantity	0	0	0
Congressional Add to develop interim UUV capability, with common and modular architecture, to the Submarine Force and Surface Fleet that would allow for the development of CONOPS, and Training Tactics.			