

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: February 2007	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-4						R-1 ITEM NOMENCLATURE 0603502N/Surface and Shallow Water Mine Countermeasure					
COST (\$ in Millions)	Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Total PE Cost	990.010	148.298	116.124	91.122	103.798	123.208	129.548	146.550	176.709	Continuing	Continuing
Remote Minehunting System / 0260	344.431	36.946	5.604	0.000	0.000	25.612	25.908	33.531	34.124	Continuing	Continuing
Mine Counter Measures Mid-Life Upgrades / 1233	76.865	13.568	19.367	28.304	25.302	15.848	14.129	20.652	25.684	Continuing	Continuing
Unmanned Underwater Vehicle / 2094	359.711	52.953	25.228	13.026	21.811	28.682	40.297	53.482	77.456	Continuing	Continuing
Assault Breaching System / 2131	206.214	26.746	35.742	35.194	44.019	30.404	29.443	18.881	14.056	Continuing	Continuing
Low Frequency Broadband / 3102	0.000	7.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.464
SMCM UUV / 3123	0.000	1.027	10.785	7.744	12.666	22.662	19.771	14.931	20.330	Continuing	Continuing
Expendable Mine Neutralization System / 4025	1.825	8.214	13.222	6.854	0.000	0.000	0.000	5.073	5.059	Continuing	Continuing
BPAUV / 9513 *	0.964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.964
9999 Congressional Add	0.000	1.380	6.176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.556
Quantity of RDT&E Articles											0.000
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
<p>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.</p> <p>* Congressional plus-up of 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).</p> <p>* Congressional plus-up of the Battlespace Preparation Autonomous Undersea Vehicle (BPAUV) is an unmanned system capable of minehunting and oceanographic data gathering. The BPAUV will be launched and recovered from Littoral Combat Ship (LCS) Flight 0. The Congressional plus up supports development of two engineering development systems.</p>											
(U) B. JUSTIFICATION FOR BUDGET ACTIVITY:											
<p>This program is funded under DEMONSTRATION AND VALIDATION because it develops and integrates hardware for experimental testing related to specific ship or aircraft applications.</p>											

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		February 2007
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY BA-4	0603502N/Surface and Shallow Water Mine Countermeasure	

(U) B. PROGRAM CHANGE SUMMARY:

(U) B. PROGRAM CHANGE SUMMARY:	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Previous President's Budget (FY07 Pres. Controls)	118.682	130.265	131.401	127.034
Current BES/Presidents Budget (FY08/09 Pres. Controls)	148.298	116.124	91.122	103.798
Total Adjustments	<u>29.616</u>	<u>-14.141</u>	<u>-40.279</u>	<u>-23.236</u>
Summary of Adjustments:				
Congressional Undistributed Reductions	0.109	-0.441	0.000	0.000
Program Adjustment	29.507	-13.700	-40.279	-23.236
Subtotal	<u>29.616</u>	<u>-14.141</u>	<u>-40.279</u>	<u>-23.236</u>

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 0260 Remote Minehunting Systems						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		344.431	36.946	5.604	0.000	0.000						
RDT&E Articles Qty		2										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The AN/WLD-1(V)(1), Remote Minehunting System (RMS), consists of a diesel powered semi-submersible Remote Minehunting Vehicle (RMV) 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 will 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).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 0260 Remote Minehunting Systems

(U) B. Accomplishments/Planned Program

Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	5.291	0.000	0.000	0.000
RDT&E Articles Quantity				

Provide System and Hardware Engineering fixes for Issue Resolutions.

Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	12.968	0.000	0.000	0.000
RDT&E Articles Quantity				

RMS tasking includes address and close 159 reliability and suitability issues. Software certification. Conduct DT/OT training. Update Integrated Electronic Technical Manual (IETM) in support of Operational Assessment.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 0260 Remote Minehunting Systems

(U) B. Accomplishments/Planned Program

T&E	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	15.399	5.104	0.000	0.000
RDT&E Articles Quantity				

Conduct Regression Test, End to End software Longevity Test, Pre-dives Suitability Test, In-water Reliability Test, Regression Test, and Operational Assessment.
Conduct TECHEVAL and OPEVAL.

Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	3.288	0.500	0.000	0.000
RDT&E Articles Quantity				

Support completion of above test events and SW Certification. Develop documentation in support of 2nd LRIP Decision. Continue development of ILS & supportability products and engineering support. Travel.

TOTAL	36.946	5.604	0.000	0.000
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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4			PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM			PROJECT NUMBER AND NAME 0260 Remote Minehunting Systems				
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
2622 / OPN (LV064, LV830, LV900) RMS	55.289 *	0.000	2.665	3.236						
(U) RDT&E, PE 0604373N, 0529	6.635	10.924	5.184	2.510						
* Note: FY06 control includes \$28M that was reprogrammed to 0603502N/0260 via the FY06 Omnibus.										
(U) D. ACQUISITION STRATEGY:										
<p>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 and path forward which includes FY07 (3rd) LRIP and Full Rate Production Decision in FY08. This decision was documented in Acquisition Decision Memorandum (ADM) dated 21 Sep 2006.</p>										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			0260 Remote Minehunting Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development & Integration	CPIF	Lockheed Martin	97.283									0.000	97.283	
Hardware Development & Integration	CPIF	Lockheed Martin	90.972	5.021	07/06							Continuing	Continuing	
Hardware Development & Integration	WX	NSWC, PC	7.140									Continuing	Continuing	
Systems Engineering	CPIF	Lockheed Martin	5.465									0.000	5.465	
Systems Engineering	CPIF	Lockheed Martin	6.486									Continuing	Continuing	
Systems Engineering	WX	NSWC, PC	1.915	0.270	07/06							Continuing	Continuing	
Award Fees	CPIF	Lockheed Martin	5.485									0.000	5.485	
Subtotal Product Development			214.746	5.291		0.000		0.000		0.000		Continuing	Continuing	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			0260 Remote Minehunting Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	CPIF	Lockheed Martin	18.470									0.000	18.470	
Developmental Test & Evaluation	CPIF	Lockheed Martin	14.210	10.961	07/06							Continuing	Continuing	
Developmental Test & Evaluation	WX	NSWC, PC	8.164	1.080	02/06							Continuing	Continuing	
Developmental Test & Evaluation	WX	COTF	0.000	0.300	02/06							Continuing	Continuing	
Developmental Test & Evaluation	various	VARIOUS	0.000	3.058	07/06	5.104	11/06					Continuing	Continuing	
Subtotal T&E			40.844	15.399		5.104		0.000		0.000		Continuing	Continuing	
Remarks:														
Contractor Engineering Support	CPIF	Lockheed Martin	3.699	2.570	07/06	0.300	11/06					Continuing	Continuing	
Government Engineering Support	WX	NSWC, PC	22.393	0.503	07/06	0.100	11/06					Continuing	Continuing	
Government Engineering Support	WX	NSWC, PC	0.000	0.137	02/06							Continuing	Continuing	
Program Management Support	CPFF	CACI	4.308			0.050	11/06					Continuing	Continuing	
Travel	PD	NAVSEA	0.438	0.078	02/06	0.050	11/06					Continuing	Continuing	
SBIR Assessment	Various	Various	6.361									Continuing	Continuing	
Subtotal Management			37.199	3.288		0.500		0.000		0.000		Continuing	Continuing	
Remarks:														
Total Cost			344.431	36.946		5.604		0.000		0.000		Continuing	Continuing	
Remarks:														

EXHIBIT R-4, Schedule Profile	DATE: February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 0260 Remote Minehunting Systems
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AN/WLD-1(V)(1) PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestones				△			△	△																								
				Second LRIP Decision			IOC	FRPD																								
Events				△			△	△																								
Production Readiness Review				△			PRR																									
Production Options				△			△	△																								
Production Competitive CA							△	△																								
Contract (N00024-02-C-6309)									EDM																							
Contract (N00024-05-C-6327)													FY05 3 LRIPs, FY06 4 LRIPs, FY07 2																			
Contract (N00024-08-C-TBD)													Competitive Production Contract																			
Deliveries				2 EDMs																												
N85 Deliveries				▲▲				3 LRIPs																								
N86 Deliveries													6 LRIPs (N86) and Prods Deliveries (N85 and N86)																			
Test & Evaluation				▲				▲																								
OA (DDG)				▲																												
DT-IIC (Crew OJT)				▲				▲																								
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Operations and Maintenance Support																																

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Exhibit R-4a, Schedule Detail						DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&BA-4	0603502N, Surface & Shallow Water MCM				0260 Remote Minehunting Systems			
Schedule Profile: AN/WLD-1(V)(1)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestones:								
Second (FY06) LRIP Decision	4Q							
FRPD			1Q					
IOC		4Q						
Events:								
Production Readiness Review		1Q						
FY06 and FY07 Options		1Q-4Q						
Production Competitive CA			2Q					
Contract (N00024-02-C-6309):								
EDM	1Q - 4Q	1Q-3Q						
Contract (N00024-05-C-6327):								
FY05 LRIP	1Q-4Q	1Q-4Q	1Q					
FY06 LRIP Option		1Q-4Q	1Q-4Q	1Q				
FY07 Production Option		4Q	1Q-4Q	1Q-4Q	1Q - 4Q	1Q		
Contract (N00024-08-C-TBD):								
Competitive Production Contract			2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Deliveries:								
N85 Deliveries	4Q	1Q-4Q	1Q					
N86 Deliveries		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Test & Evaluation:								
OA on DDG	4Q							
DT-IIC - Crew OJT		1Q						
DT-IID - Techeval		1Q						
OT-IIB - DDG Opeval		3Q						
OA on LCS			2Q					
Operations and Maintenance Support	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		76.865	13.568	19.367	28.304	25.302						
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(1) High-Frequency, Wide Band (HFWB) is a technology upgrade to the SQQ-32 Towed Body which will incorporate HFWB 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) MCM Command Control, Communication, Computers and Intelligence (C4I) meet FORCEnet implementation standards; develop and maintain Mine Warfare (MIW) C4I Surveillance and Reconnaissance (C4ISR) architecture; identify and validate C4ISR shortfalls. 4) Develop and implement Mine Countermeasures Commander's Estimate of the Situation (MCM CES)*. 5) Battle Space Profiler (BSP) is used to optimize sonar setup (towed body depth and depression/elevation (D/E) angles), support mission planning based on predicted sonar performance, and adapt mission planning to changes in the environment and threats. Improvement to the BSP system will allow the BSP to become an in-situation real-time environmental data collection system and will allow sharing pertinent data such as MEDAL contact and environmental databases, as well as all Navigation information. 6) 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> <p>* Formerly Course of Action Planner (COAP)</p>												

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades		
(U) B. Accomplishments/Planned Program				
BSP / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.616	0.321	0.000	0.000
RDT&E Articles Quantity				
Develop NAVO and NRL products into an integrated Battle Space Profiler (BSP) System.				
BSP / Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.110	0.050	0.000	0.000
RDT&E Articles Quantity				
Develop logistics products, including sparing, training materials, and interactive technical manual.				
BSP / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.320	0.106	0.000	0.000
RDT&E Articles Quantity				
Management: Provide program management support and travel for BSP program.				
BSP TOTAL	1.046	0.477	0.000	0.000

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades
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(U) B. Accomplishments/Planned Program

C4I / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.744	1.056	0.000	0.000
RDT&E Articles Quantity				

Product Development:

Continue MIW information system engineering effort. This effort to include the ongoing development of the MIW Command Control, Communication, Computers and Intelligence (C4I) Surveillance Reconnaissance (C4ISR) Architecture, which documents the Information Exchange Requirements of the MIW community and serves as Architecture for all MIW Programs of Record as required by DODI 5000.2. Rev 2 Architecture will support FORCEnet objectives to define MIW C4I capability in 2015.

C4I / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.153	0.223	0.000	0.000
RDT&E Articles Quantity				

Management:

Provide program management support and travel for MIW C4I program.

C4I TOTAL	0.897	1.279	0.000	0.000
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(U) B. Accomplishments/Planned Program

MCM CES / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.814	0.262	0.364	0.093
RDT&E Articles Quantity				

Product Development: Development of MCM Commander's Estimate of the Situation (MCM CES) and Rule Set Engine. (FY07) Complete development of Build 0, testing for Build 0, begin Build 1 development, and develop Build 1 modules. (FY08) Development of Build 1, MEDAL 2.0 and MCM CES Build 1 modules. (FY09) Complete integration testing with MEDAL 2.0.

MCM CES / Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.110	0.559	0.600	0.060
RDT&E Articles Quantity				

Support: 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.

MCM CES / Test and Evaluation	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.100	0.000	0.100
RDT&E Articles Quantity				

Test and Evaluation: Perform Test and Evaluation of MCM CES tool. (FY07) Complete testing of Build 0 EDM. (FY09) Complete testing of Build 1 with MEDAL Baseline 2.0.

MCM CES / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.094	0.080	0.080	0.020
RDT&E Articles Quantity				

Management: Provide program management support and travel for MCM CES. Program management shall include overall technical guidance and leadership for the program. Other ongoing PM support includes oversight of financial and logistics efforts and adequate coordination with MEDAL. Other PM tasking to include briefings, demonstrations, and project planning as required.

MCM CES TOTAL	1.018	1.001	1.044	0.273
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(U) B. Accomplishments/Planned Program

HFWB / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	5.462	5.901	6.351	1.771
RDT&E Articles Quantity				

Begin Design and fabrication of transducer and associated electronics; Integration of fiber optic tow cable; Design and selection of shipboard Commercial-off-the-Shelf (COTS) processing and operator console components. Continue design and fabrication efforts; begin laboratory integration, testing and in-water component tests.

HFWB / Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.667	2.400	4.500	0.500
RDT&E Articles Quantity				

Develop beamforming and display software; Modify existing software and integration of new software; Integrated Logistic Support (ILS): Develop Initial Capabilities Documents (ICDs), installation packages, technical manual and training updates.

HFWB / T&E	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.175	0.350	1.040	2.401
RDT&E Articles Quantity				

Conduct component and development Environmental Qualification Testing (EQT).

HFWB / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.418	0.505	0.701	0.260
RDT&E Articles Quantity				

Management:
Provide program management support and travel for AN/SQQ-32 High Frequency Wideband (HFWB) Upgrade program.

HFWB TOTAL	7.722	9.156	12.592	4.932
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades		
(U) B. Accomplishments/Planned Program				
MEDAL / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.424	4.251	5.886	5.383
RDT&E Articles Quantity				
Product Development: For all MEDAL software development, new functions shall be incorporated through the execution of an evolutionary development process. These functions shall be in accordance with the prioritized fleet requirements and the MEDAL Program Plan. Complete IOC Build 10, complete development and test of Build 11, Initiate development of Enterprise Architecture (EA) v.1. Complete IOC Build complete development and test of EA v.1, Initiate development of EA v.2. Complete IOC EA v.1. Developed and integrated Global Command and Control System-Maritime (GCCS-M) 4.x hardware for M-class ships and expeditionary units. This effort includes the identification, approval, design, planning, programming, budgeting and accomplishment of improvements that increase the ability of the MIW ships to perform assigned missions. This is the first step in a larger plan to upgrade the MCM and MHC Class ships to the full IT-21 suite by rapidly inserting the minimum components enabling the MCM fleet to maximize operational effectiveness and minimize associated risk for own force and supported joint forces.				
MEDAL / Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.402	0.402	0.402
RDT&E Articles Quantity				
Support: 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.				
MEDAL / Test and Evaluation	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.500	0.250	0.750
RDT&E Articles Quantity				
Test and Evaluation: Perform testing of all builds and baselines of MEDAL and MEDAL integration, test of Build II, Test of Baseline 2.0.				
MEDAL / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.461	0.570	0.570	0.570
RDT&E Articles Quantity				
Management: 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.				
MEDAL TOTAL	2.885	5.723	7.108	7.105

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades		
(U) B. Accomplishments/Planned Program				
USV / Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.092	3.648	2.184
RDT&E Articles Quantity			2	
Hardware and Software Development for the Unmanned Surface Sweep System (US3).				
USV / Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.890	2.047	5.667
RDT&E Articles Quantity				
Engineering and ILS support for developing USV system. Support for programmatic and logistical documentation.				
USV / Test and Evaluation	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.168	0.895	3.898
RDT&E Articles Quantity				
Risk Reduction Testing/ CT and DT planning and completion.				
USV / Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.581	0.970	1.243
RDT&E Articles Quantity				
Program support and management necessary to monitor contractor progress; review system capabilities; monitor cost and schedule; monitor contractor deliverables.				
US3 TOTAL	0.000	1.731	7.560	12.992

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM			PROJECT NUMBER AND NAME 1233 Mine Counter Measures Mid-Life Upgrades					
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	To <u>Complete</u>	Total <u>Cost</u>
2622 / OPN (LV075/LV078/LV080/LV830/LV900)	25.261	23.357	11.339	11.444						
(U) 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.										
BSP - The system is being developed by NAVO, NRL and NSWC, PC. The improvements being incorporated into the BSP system are modifications to existing products										
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 COMINEWARCOM 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.										
USV- The Unmanned Surface Vehicle sweep system effort will be 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 and then LRIP and a full rate production decision in FY10.										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM				1233 Mine Counter Measures Mid-Life Upgrades							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Develop Bottom Sediment Classifier	WX	NRL	0.000	0.258	04/06							0.000	0.258	
Develop Current Profiler	WX	NAVO	0.000									0.000	0.000	N/A
Develop Hydro-Optics Package	WX	NAVO	0.000									0.000	0.000	
Systems Engineering and Integration	WX	NSWC, PC		0.100	05/06	0.206	11/06					0.000	0.306	
System Development	WX	NSWC, PC	0.000	0.258	02/06	0.115	11/06					0.000	0.373	
Subtotal Product Development			0.000	0.616		0.321		0.000		0.000		0.000	0.937	
Remarks:														
Develop Logistics Products	WX	NSWC, PC	0.000	0.110	02/06	0.050	11/06					0.000	0.160	N/A
Subtotal Support			0.000	0.110		0.050		0.000		0.000		0.000	0.160	
Remarks:														
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Program Mangement Support	CPFF	CACI		0.050	10/05	0.030	10/06					0.000	0.080	N/A
Travel	PD	NAVSEA	0.000	0.080	10/05	0.010	10/06					0.000	0.090	
Government Engineering Support	WX	NSWC, PC		0.190	02/06	0.066	10/06					0.000	0.256	N/A
Subtotal Management			0.000	0.320		0.106		0.000		0.000		0.000	0.426	
Remarks:														
BSP TOTAL			0.000	1.046		0.477		0.000		0.000		0.000	1.523	

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM				1233 Mine Counter Measures Mid-Life Upgrades							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WX	NSWC, PC/NAVAIR	1.115	0.744	11/05	1.056	11/06					0.000	2.915	
Subtotal Product Development			1.115	0.744		1.056		0.000		0.000		0.000	2.915	
Remarks:														
Software Development	CPFF	SAIC	0.350									0.000	0.000	N/A
Subtotal Support			0.350	0.000		0.000		0.000		0.000		0.000	0.350	
Remarks:														
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Program Management Support	CPFF	CACI	0.168	0.050	10/05	0.045	10/06					0.000	0.263	N/A
Travel	PD	NAVSEA	0.074			0.010	10/06					0.000	0.084	
Government Engineering Support	WX	NSWC, PC		0.103	10/05	0.168	10/06					0.000	0.271	
Program Management Support	Various	NAVSEA	0.157									0.000	0.157	N/A
SBIR Assessment			0.019									0.000	0.019	N/A
Subtotal Management			0.418	0.153		0.223		0.000		0.000		0.000	0.794	
Remarks:														
C4I TOTAL			1.883	0.897		1.279		0.000		0.000		0.000	4.059	

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Exhibit R-3 Cost Analysis (page 1)											DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM				1233 Mine Counter Measures Mid-Life Upgrades							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WX	NSWC, PC	0.000	0.814	11/05	0.262	11/06	0.364	11/07	0.093	11/08	Continuing	Continuing	
Subtotal Product Development			0.000	0.814		0.262		0.364		0.093		0.000	1.533	
Remarks:														
Software Development	CPFF	SAIC		0.110	11/05	0.559	11/06	0.600	11/07	0.060	11/08	Continuing	Continuing	N/A
Subtotal Support			0.000	0.110		0.559		0.600		0.060		0.000	1.329	
Remarks:														
Test and Evaluation	VAR	Various				0.100	05/07			0.100	11/08	Continuing	Continuing	
Subtotal T&E			0.000	0.000		0.100		0.000		0.100		0.000	0.200	
Remarks:														
Program Management Support	CPFF	CACI		0.045	10/05	0.050	10/06	0.050	10/07	0.020	10/08	Continuing	Continuing	N/A
Travel	PD	NAVSEA		0.005	10/05	0.005	10/06	0.005	10/07			Continuing	Continuing	
Government Engineering Support	WX	NSWC, PC		0.044	10/05	0.025	10/06	0.025	10/07			Continuing	Continuing	N/A
Subtotal Management			0.000	0.094		0.080		0.080		0.020		0.000	0.274	
Remarks:														
MCM CES TOTAL			0.000	1.018		1.001		1.044		0.273		0.000	3.336	

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM				1233 Mine Counter Measures Mid-Life Upgrades							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WX	ARL:UT/NSWC PC		4.060	11/05	4.857	11/06	6.101	10/07	1.771	10/08	Continuing	Continuing	
Tow Cable Development	WX	NSWC, PC		0.800	10/05	0.599	10/06					Continuing	Continuing	
Ship Integration	WX	NSWC, PC		0.602	10/05	0.445	10/06	0.250	10/07			Continuing	Continuing	
Subtotal Product Development			0.000	5.462		5.901		6.351		1.771		0.000	19.485	
Remarks:														
(HFWB) Software Development	WX	ARL:UT; NSWC:PC		1.317	11/05	1.400	11/06	3.500	10/07	0.250	10/08	Continuing	Continuing	N/A
(HFWB) Integrated Logistics Support	WX	NSWC, PC		0.350	10/05	1.000	10/06	1.000	10/07	0.250	10/08	Continuing	Continuing	
Subtotal Support			0.000	1.667		2.400		4.500		0.500		0.000	9.067	
Remarks:														
Developmental Test & Evaluation	WX	NSWC:PC, ARL:UT		0.175	11/05	0.350	11/06	1.040	10/07	2.401	10/08	Continuing	Continuing	
Subtotal T&E			0.000	0.175		0.350		1.040		2.401		0.000	3.966	
Remarks:														
Program Management Support	Various	Various		0.268	10/05	0.290	10/06	0.386	10/07	0.150	10/08	Continuing	Continuing	N/A
Travel	PD	NAVSEA				0.015	10/06	0.015	10/07	0.010	10/08	Continuing	Continuing	
Government Engineering Support	WX	NSWC, PC		0.150	10/05	0.200	10/06	0.300	10/07	0.100	10/08	Continuing	Continuing	N/A
Subtotal Management			0.000	0.418		0.505		0.701		0.260		0.000	1.884	
Remarks:														
HFWB TOTAL			0.000	7.722		9.156		12.592		4.932		0.000	34.402	

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Exhibit R-3 Cost Analysis (page 1)											DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			1233 Mine Counter Measures Mid-Life Upgrades								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	CPFF	SAIC	4.292	2.424	11/05	4.251	11/06	5.886	11/07	5.383	11/08	Continuing	Continuing	
Subtotal Product Development			4.292	2.424		4.251		5.886		5.383		0.000	22.236	
Remarks:														
Software Engineering	WX	SPAWAR	0.000			0.182	11/06	0.182	11/07	0.182	11/08	Continuing	Continuing	N/A
Software Engineering	WX	NSWC, PC	0.000			0.220	11/06	0.220	11/07	0.220	11/08	Continuing	Continuing	
Subtotal Support			0.000	0.000		0.402		0.402		0.402		0.000	1.206	
Remarks:														
Test and Evaluation	VAR	Various	0.000			0.500	10/06	0.250	10/07	0.750	10/08	Continuing	Continuing	N/A
Subtotal T&E			0.000	0.000		0.500		0.250		0.750		0.000	1.500	
Remarks:														
Program Management Support	CPFF	CACI	0.290	0.150	10/05	0.245	10/06	0.245	10/07	0.245	10/08	Continuing	Continuing	N/A
Travel	PD	NAVSEA	0.124	0.015	10/05	0.025	10/06	0.025	10/07	0.025	10/08	Continuing	Continuing	
SBIR Assessment			0.054									Continuing	Continuing	
Government Engineering Support	WX	NSWC, PC		0.296	10/05	0.300	10/06	0.300	10/07	0.300	10/08	Continuing	Continuing	
Program Management Support	Various	NAVSEA	0.350									Continuing	Continuing	N/A
Subtotal Management			0.818	0.461		0.570		0.570		0.570		0.000	2.989	
Remarks:														
MEDAL TOTAL			5.110	2.885		5.723		7.108		7.105		0.000	27.931	

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			1233 Mine Counter Measures Mid-Life Upgrades								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	TBD	EDO						3.622	11/07	2.000	11/08	Continuing	Continuing	
Product Development	WX	NSWC, PC				0.092	04/07	0.026	11/07	0.184	11/08	Continuing	Continuing	N/A
Subtotal Product Development			0.000	0.000		0.092		3.648		2.184		0.000	5.924	
Remarks:														
Engineering	TBD	EDO						0.257	11/07	1.477	11/08	Continuing	Continuing	
Integrated Logistics	TBD	EDO						0.355	11/07	0.979	11/08	Continuing	Continuing	
Engineering	WX	NSWC, PC				0.609	11/06	1.300	11/07	2.071	11/08	Continuing	Continuing	
Integrated Logistics	WX	NSWC, PC				0.281	11/06	0.135	11/07	1.140	11/08	Continuing	Continuing	
Subtotal Support			0.000	0.000		0.890		2.047		5.667		0.000	8.604	
Remarks:														
T&E	TBD	EDO						0.627	11/07	1.559	11/08	Continuing	Continuing	
T&E	WX	NSWC, PC				0.168	11/06	0.268	11/07	2.339	11/08	Continuing	Continuing	
Subtotal T&E			0.000	0.000		0.168		0.895		3.898		0.000	4.961	
Remarks:														
Contractor Management	TBD	EDO						0.323	11/07	0.466	11/08	Continuing	Continuing	N/A
Governemnt Management & Support	Var	Var				0.556	11/06	0.622	11/07	0.752	11/08	Continuing	Continuing	N/A
Travel	PD	NAVSEA				0.025	11/06	0.025	11/07	0.025	11/08	Continuing	Continuing	N/A
Subtotal Management			0.000	0.000		0.581		0.970		1.243		0.000	2.794	
Remarks:														
US3 TOTAL			0.000	0.000		1.731		7.560		12.992		0.000	22.283	

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile	DATE: February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 1233 Mine Counter Measures Mid-Life Upgrades
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BSP PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HW/SW Design and Development																																
Preliminary Design Review		▲																														
Critical Design Review			▲	▲																												
Env., Shock, & Safety Testing																																
EDM Installation & C/O																																
IOC																																

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 1233 Mine Counter Measures Mid-Life Upgrades

MIW C4ISR PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Events																																
MIW Information System Engineering Effort	█	█	█	█																												
MIW C4ISR Architecture																																
Rev 1 Architecture	█	█																														
Rev 2 Architecture		█	█	█				▲																								
MCM/C4I Integration	█	█	█	█																												
MIW FORCENet Implementation	█	█	█	█																												

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile						DATE: February 2007																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4				PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM				PROJECT NAME AND NUMBER 1233 Mine Counter Measures Mid-Life Upgrades																												
MCM CES																																				
	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Events																																				
Build 0 (EDM)																																				
Development and Test (FAT)																																				
Fleet Trial																																				
IOC																																				
Build 1																																				
Development and Test																																				
Integration and Test																																				
IOC																																				

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT& E, N/BA-5		PROGRAM ELEMENT 0603502N, Surface and Shallow Water MCM		R-1 ITEM NOMENCLATURE 1233 Mine Counter Measures Mid-Life Upgrades	

E. Schedule Profile

AN/SQQ-32 HFWB SONAR UPGRADE PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Events																																
Design & Fabrication																																
In Water Transducer Performance Tests																																
Shipboard Installation and Checkout																																
At-Sea Tests																																
EQT Tests																																
Production																																

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile	DATE: February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 1233 Mine Counter Measures Mid-Life Upgrades
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US3 PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Program Milestones							MS B	◇					MS C/LRIP	◇			FRPD	◇														
Contracting Events							Development Contract Award	△					LRIP Contract Award	△					FRP Contract Award	△												
Major Test Events											CT	DT			OT																	
System Development									EDM Contract																							
LRIP Production															LRIP Prod																	
Full Rate Production																	Full Rate Production															

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME Surface & Shallow Water MCM, 0603502N				PROJECT NUMBER AND NAME Unmanned Undersea Vehicle 2094						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		359.711	52.953	25.228	13.026	21.811					CONT	472.729
RDT&E Articles Qty			2									2

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The November 2004 UUV Master Plan established Intelligence, Surveillance, and Reconnaissance (ISR), clandestine Mine Countermeasures (MCM) and Anti-Submarine Warfare as top priorities. In summer 2006, the Navy Capabilities Board (NCB) validated the MCM and ISR requirements for 21" UUVs. The Mission Reconfigurable UUV System (MRUUVS) was designated by the NCB as the vehicle to provide this capability to the warfighter.

Planning has begun for a new acquisition program to develop a modular, reconfigurable 21" MRUUVS for contract award in FY09. The MRUUVS will leverage technology developed under two previous programs: the AN/BLQ-11 Long-Term Mine Reconnaissance System (LMRS) and the Littoral Precision Underwater Mapping Array(LPUMA). To mitigate remaining risk before MS-B, the program will conduct component development and capability demonstration utilizing the LMRS to mature homing and docking methods for attack submarines (SSNs). LPUMA will be used to develop forward looking sonar used for mine detection, obstacle avoidance, and near-SSN maneuvering to include docking. The first payload developed by the MRUUVS program will support the MCM mission. Other payload developments will be initiated separately following system maturation.

R-1 SHOPPING LIST - Item No.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME Surface & Shallow Water MCM, 0603502N	PROJECT NUMBER AND NAME Unmanned Undersea Vehicle 2094/2852

(U) B. Accomplishments/Planned Program

LMRS	FY 06	FY 07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	12.226	0.000	0.000	0.000
RDT&E Articles Quantity	1			

Completed launch and recovery testing from an SSN. Conduct contract closeout.
RDT&E Articles = 1 system comprised of 2 vehicles, a recovery arm, support equipment and components.

ADUUV	FY 06	FY 07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	9.269	0.000	0.000	0.000
RDT&E Articles Quantity	1	0		

ADUUV development completed in FY06 with contract close out to take place in 2nd Quarter 2007. Delivery will include 1 RDT&E Article that comprise system and vehicle with supporting components.

21" MRUUVS	FY 06	FY 07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	30.581	25.228	13.026	21.811
RDT&E Articles Quantity				

Continue pre milestone B component development, capability demonstration, L-PUMA risk reduction efforts, Sea-Test to demonstrate recovery arm capability, and acquisition planning for 21" MRUUVS program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME Surface & Shallow Water MCM, 0603502N	PROJECT NUMBER AND NAME Unmanned Undersea Vehicle 2094/2852

(U) B. Accomplishments/Planned Program

LD MRUUV	FY 06	FY 07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	0.877	0.000	0.000	0.000
RDT&E Articles Quantity				

Conduct LD MRUUV requirements study.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME Surface & Shallow Water MCM, 0603502N			PROJECT NUMBER AND NAME Unmanned Undersea Vehicle 2094				
(U) C. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>		<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
2171 / OPN / Unmanned Undersea Vehicles		0.000	0.000	0.000	0.000				
 (U) D. ACQUISITION STRATEGY:									
A modular, reconfigurable 21" MRUUVS will be initiated with a competitively awarded contract planned for FY09.									

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-4			Surface & Shallow Water MCM, 0603502N			Unmanned Undersea Vehicle 2094						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY08 Costs	FY 08 Award Date	FY09 Costs	FY 09 Award Date	
LMRS	CPAF/IF	Boeing	130.073	4.798	N/A							
Fees			7.612									
LMRS	Various	Various	43.622	7.428	N/A							
ADUUV	CPIF	Lockheed Martin	24.218	6.552	N/A							
ADUUV	Various	Various	17.922	2.717								
UUV P3I	Various	Various	37.383	0.000								
21" MRUUVS	Various	Various	24.123	19.555		18.938	TBD	8.019	TBD	3.236	TBD	
UUV Test center	Various	Various	7.502									
LD MRUUV	Various	Various	0.411	0.877								
21" MRUUVS Dev Contract	CPAF	TBD	0.000							14.400	12/08	
Subtotal Product Development			292.866	41.927		18.938		8.019		17.636		
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000		
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RD&E, N / BA-4			Surface & Shallow Water MCM, 0603502N			Unmanned Undersea Vehicle 2094						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY07 Costs	FY 07 Award Date	FY08 Costs	FY 08 Award Date	FY09 Costs	FY 09 Award Date	
Developmental Test & Evaluation	Various	Various	11.437									
Operational Test & Evaluation	WR	Various	0.000									
GFE/GFI	Various	Various	0.644									
TTLRF	WR	Various	7.081									
Award Fees												
Subtotal T&E			19.162	0.000		0.000		0.000		0.000		
Remarks:												
Contractor Engineering Support			8.238	2.174	N/A	2.000	N/A	0.531	N/A	1.368	N/A	
Government Engineering Support			28.195	5.107	N/A	2.240	N/A	2.321	N/A	1.788	N/A	
Program Management Support			11.250	3.745	N/A	2.050	N/A	2.155	N/A	1.019	N/A	
Subtotal Management			47.683	11.026		6.290		5.007		4.175		
Remarks:												
Total Cost			359.711	52.953		25.228		13.026		21.811		

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																			DATE: February 2007															
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																			
RDT&E, N /					Surface & Shallow Water MCM, 0603502N										Unmanned Undersea Vehicle 2094/2852																			
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Complete LMRS Baseline	[Bar]																																	
ADUUV Development/ LPUMA Integration	[Bar]																																	
21" MRUUVS	Risk Reduction/Acquisition Planning																																	

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 2131 Assault Breaching Systems						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		206.214	26.746	35.742	35.194	44.019						
RDT&E Articles Qty												

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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. Countermine/Counter Obstacle (CM/CO) -

Near term - JDAM Assault Breaching System (JABS) - This system is being characterized at the 6.3 S&T level to be used in the Fleet as an interim CM/CO capability until the "Far-Term" CM /CO system is developed. This near-term system JABS consists of in-service MK 84 general purpose bombs with a JDAM tail kit. This system is already being used in the fleet, however it is being characterized for a limited assault breaching mission. Follow-On-Test and Evaluation (FOT&E), risk mitigation, logistics, and operational readiness concerns need to be addressed for the ABS mission with ABS funding.

Far term - Counter Mine System (CMS) - will transition from a 6.3 S&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&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.

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.

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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 2131 Assault Breaching Systems

(U) B. Accomplishments/Planned Program

Product Development	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	18.105	30.142	29.947	37.232
RDT&E Articles Quantity				

Product Development: Countermine/Counter Obstacle (CM/CO) - JABS Follow-On-Test and Evaluation (FOT&E), risk mitigation, logistics, and operational readiness. Counter Mine System (CMS) - refine dart technology and delivery technique. Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA: Refine Block I technology, transition ONR developed technology into Blocks II and III, and enable the capability to detect surface laid mines in the surf zone (day and night), detect buried mines, and near-real-time onboard processing. Precision Navigation/Virtual Marking- Develop precise navigational upgrades for the Landing Craft, Air Cushion (LCAC) and Landing Craft, Utility (LCU), and Amphibious Amphibious Assault Vehicle (AAV) to enable the craft to safely navigate the neutralized assault lanes. Mine Threat Acquisition for R&D Development and Testing, DDGPS Development (Marking).

Support	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	1.125	0.527	0.583	0.999
RDT&E Articles Quantity				

Support: CM/CO - Mine Burial Effects/Mine Case/TNT Studies in support of requirements development, Fuse Vulnerability Studies. Tactical Decision Aid Development, Modeling and Simulation in support of Far-Term Development. ABS Scalability study. Precision Navigation/Virtual Marking - COTS technical analysis, product integration, market surveys, technical support in installation instructions. ISR/T - Technical analysis, modeling and simulation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 2131 Assault Breaching Systems

(U) B. Accomplishments/Planned Program

Test and Evaluation	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	2.865	0.170	0.165	0.206
RDT&E Articles Quantity				

Test and Evaluation: CM/CO - JABS Risk Mitigation Testing; Commander Operational Test & Evaluation Forces Test Support, Arena testing. CMS arena testing, live weapon 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.

Management	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	4.651	4.633	4.499	5.582
RDT&E Articles Quantity				

Management: ABSoS program management support, In-house contractor support (CACI, COMOPTEVFOR, and Northrop Grumman). Technical Direction Agent/Design Agent (TDA/DA) Engineering Support of Milestone preparation, contract and acquisition documentation, Requirements Generation - Initial Capabilities Document (ICD), Capability Development Documents (CDD), Capability Production Documents (CPD), Analysis of Material approvals and Functional needs analysis/functional solutions analysis, Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.

Total	26.746	35.472	35.194	44.019
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM			PROJECT NUMBER AND NAME 2131 Assault Breaching Systems					
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
2624 / OPN	2.246	8.236	1.447	7.426						
4225 / WPN	0.000	0.000	0.000	0.000						
(U) D. ACQUISITION STRATEGY:										
<p>Countermine/Counter Obstacle (CM/CO) is a two phased approach, near term and far term solutions. The near term will file the JDAM Assault Breaching System (JABS) as an interim solution. JABS requires additional lethality and reliability testing during FY07. The far term solution is CMS, which will transition from ONR in 1st QTR 07 followed by MS B decision in 3rd QTR 07 and SD&D contract in 4th Qtr 07.</p> <p>Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I will achieve MS C in 3rd QTR FY07, COBRA Block II technology will transfer from ONR and achieve MS B in 2nd Qtr of 07. COBRA Block III technology will transition in FY11 with a MS B decision scheduled for 2nd QTR FY11.</p> <p>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 achieve MS B in 2nd QTR FY 07 and MS C during 2nd QTR FY 08.</p>										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			2131 Assault Breaching Systems								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX, PD	IH, NSWC:PC TBD	26.753	2.865	11/05	0.170	11/06	0.165	11/07	0.206	11/08	Continuing	Continuing	N/A
Operational Test & Evaluation	WX	IH, NSWC:PC TBD	8.655									0.000	8.655	N/A
Tooling	WX	IH, NSWC:PC TBD	0.700									0.000	0.700	N/A
GFE	WX	IH, NSWC:PC TBD	0.400									0.000	0.400	N/A
Award Fees														
Subtotal T&E			36.508	2.865		0.170		0.165		0.206		0.000	39.914	
Remarks:														
Contractor Engineering Support	CPFF	CACI, Northrup Grumman	3.789	0.878	11/05	0.710	11/06	0.869	11/07	1.075	11/08	Continuing	Continuing	N/A
Government Engineering Support	WX	IH, NSWC:PC	20.850	1.835	11/05	1.600	11/06	1.710	11/07	2.206	11/08	Continuing	Continuing	N/A
Program Management Support	WX	IH, NSWC:PC, NAVSEA	11.744	1.863	11/05	2.248	11/06	1.848	11/07	2.212	11/08	Continuing	Continuing	N/A
Travel	PD	NAVSEA	0.902	0.075	11/05	0.075	11/06	0.072	11/07	0.089	11/08	Continuing	Continuing	N/A
Assessment/BTR	Various	Various	1.434									0.000	1.434	N/A
Subtotal Management			38.719	4.651		4.633		4.499		5.582		0.000	58.084	
Remarks:														
Total Cost			206.214	26.746		35.742		35.194		44.019		0.000	347.915	

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 2131 Assault Breaching Systems			

ABS PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Milestones					△ MS B (CM)																													
ONR 6.3 Demo Efforts					CM and CO Exploration/Technology																													
CMCO Acquisition/Development 6.4									CM and CO System Development																									
CMCO System Design and Test					Draft CDD/Approval																													
					<div style="border: 1px solid black; padding: 2px; display: inline-block;">Prep for MS B/Contract Award</div>					△ CM - CO Contract Award																								
CMCO Technical Reviews									◇ Contract Kickoff	◇ SRR	◇ SFR	◇ SSR	◇ PDR					◇ BOA	◇ CDR															
ISR/Navigation/C4I Development					ISR/Nav/C4I System Development																													

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE:			
									February 2007			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-4		0603502N, Surface and Shallow Water MCM				3102 Low Frequency Broadband						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		0.000	7.464	0.000	0.000	0.000						
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Low Frequency Broadband (LFBB) is a development program for providing Low-frequency, broadband (LFBB) sensor and processor payload for an unmanned, underwater vehicle (UUV). The project provides a needed capability for detection of buried mines and identification of mines by a combination of imaging and non-imaging signal processing technologies. This technology is being transitioned from ONR projects, which have demonstrated the technology, but need to be transitioned into a system. Funding for this program has been transferred to the Surface Mine Countermeasures Unmanned Undersea Vehicle (SMCM UUV, Project 3123) starting in FY07.</p>												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 3102 Low Frequency Broadband

(U) B. Accomplishments/Planned Program

Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	7.464	0.000	0.000	0.000
RDT&E Articles Quantity				

Product Development:
Design and prototyping of critical technology components for demonstration and evaluation.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 3102 Low Frequency Broadband
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(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
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(U) D. ACQUISITION STRATEGY:

NSWC, Panama City FL and NRL will award a contract to address the critical technologies necessary for the development of a UUV User Operational Evaluation System with low frequency boradband sonar. Procurement of the acquisition system is scheduled to start in FY11.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			3102 Low Frequency Broadband								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ADM Hardware Development		Bluefin, Cambridge, MA		3.836	08/06							0.000	3.836	
Technical Direction Agent	WX	NSWC, Panama City, FL		1.446	03/06								1.446	
Software Development		Various		1.504	03/06								1.504	
Subtotal Product Development			0.000	6.786		0.000		0.000		0.000		0.000	6.786	
Remarks:														
Engineering Support		WB&B		0.183	06/06							0.000	0.183	
Subtotal Support			0.000	0.183		0.000		0.000		0.000		0.000	0.183	

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDTE&E, N / BA-4			0603502N, Surface and Shallow Water MCM			3102 Low Frequency Broadband								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Technical Direction Agent	WX	NSWC, Panama City, FL		0.495	03/06							0.000	0.495	N/A
Subtotal T&E			0.000	0.495		0.000		0.000		0.000		0.000	0.495	
Remarks:														
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Total Cost			0.000	7.464		0.000		0.000		0.000		0.000	7.464	
Remarks:														

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4		PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM		PROJECT NAME AND NUMBER 3102 Low Frequency Broadband	

LOW FREQUENCY BROADBAND PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
UOES Contract Award Critical Technology Development				△																																

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 3123 SMCM UUV						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		0.000	1.027	10.785	7.744	12.666						
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) provides for development of Unmanned Underwater Vehicles to support dedicated mine countermeasure operations. The UUV systems must have a small deployment footprint for rapid employment aboard various SMCM platforms. Equipment includes Launch Recovery Sub-Systems and associated systems support equipment.</p> <p>*This effort was previously budgeted for in PE 0603654N, project 4024. The project was moved to 0603502N so that all of the UUV funding would fall into one R&D PE. In addition, funding from PE 0603502N project 3102 was transferred to this project to fund an integrated UUV system vice a standalone sensor project.</p>												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface & Shallow Water MCM	PROJECT NUMBER AND NAME 3123 SMCM UUV		
(U) B. Accomplishments/Planned Program				
SMCM UUV	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.027	10.785	7.744	12.666
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 100px; margin-top: 10px;"> Demonstrate operation of a UUV-based capability package for standoff, multiple MCM operations from surface MCM platforms (e.g., LCS, MCM, etc.) </div>				
Total	1.027	10.785	7.744	12.666

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			February 2007
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-4	0603502N, Surface & Shallow Water MCM	3123 SMCM UUV	

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
2622 / OPN / 72LV / LV079	0.000	0.000	0.000	0.000						

(U) D. ACQUISITION STRATEGY:

The SMCM UUV program procured 2 dual frequency Synthetic Aperture Sonar User Operational Evaluation Systems of 2 vehicles each in FY06 with delivery in early FY08 for continued Fleet experimentation. An acquisition program will be initiated in FY08 to procure Unmanned Undersea Vehicles equipped with Low Frequency Broadband sonar, culminating in a Milestone C in FY11.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603502N, Surface & Shallow Water MCM				3123 SMCM UUV							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	CMWC, Corpus Christi, TX	0.000	0.107	4/06	0.080	11/06	0.064	11/07	0.065	11/08	Continuing	Continuing	
T&E Support	CPFF	EDO, Corpus Christi, TX	0.000	0.189	04/06	0.193	11/06	0.240	11/07	0.293	11/08	Continuing	Continuing	
Subtotal T&E			0.000	0.296		0.273		0.304		0.358		0.000	1.231	
Remarks:														
Program Management Support	CPFF	Various, Wash, DC	0.000	0.154	03/06	0.468	11/06	0.153	11/07	0.381	11/08	Continuing	Continuing	
Subtotal Management			0.000	0.154		0.468		0.153		0.381		0.000	1.156	
Remarks:														
Total Cost			0.000	1.027		10.785		7.744		12.666		0.000	32.222	
Remarks:														

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile																DATE:															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4																PROGRAM ELEMENT NAME AND 0603502N, Surface & Shallow Wat				PROJECT NAME AND NUMBER 3123 SMCM UUV											
SMCM UUV Program Schedule																															
FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SMCM Shallow & Deep Water UUV																															
Dual Frequency SAS UOES Contract Award																															
Dual Freq SAS Development																															
Dual Freq SAS Fleet Experimentation																															
LFBB UUV Milestone B																															
LFBB UUV Contract Award																															
LFBB UUV Development																															
LFBB UUV Milestone C																															
LFBB UUV Production																															
P3I																															

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 4025 Expendable Mine Neutralization System						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Cost to Complete	Total Program
Project Cost		1.825	8.214	13.222	6.854	0.000						
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>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). Development of a deep water Neutralization vehicle for EMNS will occur in FY12 - FY13.</p>												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2007
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 4025 Expendable Mine Neutralization System
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(U) B. Accomplishments/Planned Program

Product Development	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.431	8.077	0.000	0.000
RDT&E Articles Quantity				

Product Development:
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.

Support	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.525	3.839	2.733	0.000
RDT&E Articles Quantity				

Support:
Develop logistics products, including training materials and interactive technical manual. Provide Engineering support, including review for product development and ship integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM	PROJECT NUMBER AND NAME 4025 Expendable Mine Neutralization System		
(U) B. Accomplishments/Planned Program				
Test and Evaluation	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	2.977	0.948	3.919	0.000
RDT&E Articles Quantity				
<p>Test and Evaluation: 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.</p>				
Management	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.281	0.358	0.202	0.000
RDT&E Articles Quantity				
<p>Management: Provide program management support and travel for EMNS.</p>				
Total	8.214	13.222	6.854	0.000

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM			PROJECT NUMBER AND NAME 4025 Expendable Mine Neutralization System					
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
EMNS 262200 OPN	0.000	0.000	7.431	15.020						
EMNS 422500 WPN	0.000	0.000	3.032	3.030						
(U) D. ACQUISITION STRATEGY:										
<p>Based on the approved Common Neutralizer Strategy, the Archerfish neutralizer will be integrated on the MCM-1 Avenger Class Ships. EMNS will be executed as an ECP to AMNS. The acquisition strategy will be full and open competition for non-neutralizer hardware development and system integration with a directed contractual relationship with VCT (flight control software). The Navy will award 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>										

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			0603502N, Surface and Shallow Water MCM			4025 Expendable Mine Neutralization System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Develop Logistics Products	CPIF	TBD				0.808	01/07	1.183	10/07			0.000	1.991	N/A
Develop Logistics Products	WX	NSWC, PC	0.092	0.178	10/05	0.225	10/06	0.091	10/07			0.000	0.586	N/A
Engineering Support	CPIF	TBD				0.772	01/07	0.193	10/07			0.000	0.965	N/A
Engineering Support	WX	NSWC, PC	0.230	2.347	10/05	2.034	10/06	1.266	10/07			0.000	5.877	N/A
Deep Water Neutralizer ILS	CPIF	BAE Systems										0.277	0.277	N/A
Deep Water Neutralizer ILS	WX	NSWC, PC										0.205	0.205	N/A
Deep Water Neutralizer Engineering	CPIF	BAE Systems										2.200	2.200	
Deep Water Neutralizer Engineering	WX	NSWC, PC										0.860	0.860	
Subtotal Support			0.322	2.525		3.839		2.733		0.000		3.542	12.961	
Remarks:														

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RD&E, N / BA-4			0603502N, Surface and Shallow Water MCM			4025 Expendable Mine Neutralization System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Develop TEMP	WX	NSWC, PC	0.100									0.000	0.100	N/A
CT/DT/OT	CPIF	TBD				0.058	01/07	1.522	10/07			0.000	1.580	N/A
CT/DT/OT	WX	NSWC, PC				0.890	10/06	2.397	10/07			0.000	3.287	
Common Neutralizer Testing	CPIF	Raytheon Portsmouth, RI		0.874	02/06							0.000	0.874	
Common Neutralizer Test Assets	CPIF	Raytheon Portsmouth, RI		2.103	02/06							0.000	2.103	
Deep Water Neutralizer T&E	CPIF	BAE Systems										0.995	0.995	
Deep Water Neutralizer T&E	WX	NSWC, PC										2.295	2.295	
Subtotal T&E			0.100	2.977		0.948		3.919		0.000		3.290	11.234	
Remarks:														
Program Mangement Support	CPFF	CACI	0.150	0.241	10/05	0.318	10/06	0.162	10/07			0.000	0.871	N/A
Travel	PD	NAVSEA	0.050	0.040	10/05	0.040	10/06	0.040	10/07			0.000	0.170	N/A
Subtotal Management			0.200	0.281		0.358		0.202		0.000		0.000	1.041	
Remarks:														
Total Cost			1.825	8.214		13.222		6.854		0.000		10.132	40.247	
Remarks:														

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603502N, Surface & Shallow Water MCM	PROJECT NAME AND NUMBER 4025 Expendable Mine Neutralization System			

EMNS PROGRAM SCHEDULE

	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contract Award							△																									
Common Neutralizer Development																																
Integration Development																																
Preliminary Design Review							△																									
Critical Design Review								△																								
Contractor / Development Testing																																
EDM Install / Checkout												△																				
TECHEVAL/OPEVAL																DT OT																
Milestone C												△																				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface and Shallow Water MCM				PROJECT NUMBER AND NAME 9999 Congressional Adds						
COST (\$ in Millions)		Prior Years Cost	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY2013	Cost to Complete	Total Program
Project Cost		0.000	1.380	6.176	0.000	0.000						
RDT&E Articles Qty												

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional plus-up. - Surface Navy Integrated Undersea TacticalTechnology (SNIUTT) Investigate development of an AN/SQQ-32, AN/AQS-14, AN/AQS-20A sensor training module for a LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

Congressional plus-up. - AN/SQQ-32(V)3 is an aging sonar system (>15 yr.) requiring technological upgrades, eliminating parts obsolescence issues and equipment refreshment or refurbishment. Currently, Naval Sea Warfare Center Panama City is funded to upgrade only the detection capability of AN/SQQ-32(V)3. This add would be used in conjunction with the current effort to further research the upgrade to the detection sonar transducer and investigate and research the upgrade to the classification sonar aspect of the system. Additionally, funding would address modernizing and upgrading the sonar equipment console capability, design, and qualifying system equipment and equipments consoles to augment this upgrade. Funding research study to upgrade AN/SQQ-32(V)3 Classification Sonar, and to provide consultation regarding detection transducer development, and design and quality sonar operator equipment consoles applicable to High Frequency Wide Band (HFWB) program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA -4	PROGRAM ELEMENT NUMBER AND NAME 0603502N, Surface & Shallow Water MCM	PROJECT NUMBER AND NAME 9999 Congressional Adds

CONGRESSIONAL ADDS:

	FY 06	FY 07	FY 08	FY 09
9179 SNIUTT Congressional Adds	1.380	2.590	0.000	0.000
High Frequency Wide Band				

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

	FY 06	FY 07	FY 08	FY 09
9967N HFWB Congressional Adds	0.000	3.586	0.000	0.000
High Frequency Wide Band				

Congressional plus-up. - AN/SQQ-32(V)3 is an aging sonar system (>15 yr.) requiring technological upgrades, eliminating parts obsolescence issues and equipment refreshment or refurbishment. Currently, Naval Sea Warfare Center Panama City is funded to upgrade only the detection capability of AN/SQQ-32(V)3. This add would be used in conjunction with the current effort to further research the upgrade to the detection sonar transducer and investigate and research the upgrade to the classification sonar aspect of the system. Additionally, funding would address modernizing and upgrading the sonar equipment console capability, design, and qualifying system equipment and equipments consoles to augment this upgrade.