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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	93.750	81.347	142.657	-	142.657	150.032	128.194	79.157	59.145	Continuing	Continuing
0260: <i>Remote Minehunting Systems</i>	10.967	19.691	50.043	-	50.043	39.325	32.271	24.175	19.103	Continuing	Continuing
1233: <i>Surface MCM Mid-life Upgrade</i>	20.922	13.479	25.593	-	25.593	30.268	26.255	19.593	19.758	Continuing	Continuing
2131: <i>Assault Breaching System</i>	29.652	31.245	49.200	-	49.200	58.906	58.517	32.905	17.697	Continuing	Continuing
3123: <i>SMCM UUV</i>	15.030	12.732	17.821	-	17.821	21.533	11.151	2.484	2.587	Continuing	Continuing
4025: <i>Expendable Mine Neutralization System</i>	1.245	4.200	-	-	-	-	-	-	-	0.000	5.445
9999: <i>Congressional Adds</i>	15.934	-	-	-	-	-	-	-	-	0.000	15.934

A. Mission Description and Budget Item Justification

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.

- Congressional plus-up for the Remote Minehunting System program.
- Congressional plus-up for the Persistent Autonomous Maritime Surveillance program.
- Congressional plus-up for the Mine Hunting Sonar program.

(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.

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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	92.334	81.347	88.515	-	88.515
Current President's Budget	93.750	81.347	142.657	-	142.657
Total Adjustments	1.416	-	54.142	-	54.142
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	3.749	-			
• SBIR/STTR Transfer	-1.984	-			
• Program Adjustments	-	-	55.588	-	55.588
• Section 219 Reprogramming	-0.339	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.446	-	-1.446
• Congressional General Reductions Adjustments	-0.010	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

 Congressional Add: *RMS Prog - Cong*

 Congressional Add: *Persistent Autonomous Maritime Surveillance*

 Congressional Add: *Mine Hunting Sonar Prog - Cong*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	7.967	-
	4.979	-
	2.988	-
Congressional Add Subtotals for Project: 9999	15.934	-
Congressional Add Totals for all Projects	15.934	-

Change Summary Explanation

Program Adjustments: FY12 \$55,142K in Total Adjustments for Fund RMMV to OSD CAPE estimate in support of Nunn-McCurdy Receritification (\$32,080K), MEDAL EA/Improved Interoperability (\$900K), Unmanned Surface Sweep System (\$4,700K), COBRA BLK II Development (\$18,600K), Countermine System Funding (\$2,000K), COBRA precision Nav MCM (-\$1,000K), Programmatic Misc changes)-\$1,446K), and ATRT and Consulting services reductions (-\$1,446).

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0260: <i>Remote Minehunting Systems</i>	10.967	19.691	50.043	-	50.043	39.325	32.271	24.175	19.103	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AN/WLD-1(V)1 Remote Minehunting System (RMS) is a mine reconnaissance system designed for the detection, classification, identification, and localization of bottom and moored targets in shallow and deep water. RMS is a fully integrated system consisting of a semi-submersible Remote Multi-Mission Vehicle (RMMV) carrying a towed variable depth sensor. Line-Of-Sight (LOS) and Over-The-Horizon (OTH) telemetry provides vehicle Command and Control and mine reconnaissance sensor data transmission to/from a system aboard a Navy ship. RMS will provide the Navy the capability to keep ships and sailors out of the minefield.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Product Development:</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conduct accelerated life testing, as part of the RMMV Reliability Growth Program.</p> <p>FY 2011 Plans: Conduct accelerated life testing, as part of the RMMV Reliability Growth Program.</p> <p>FY 2012 Base Plans: Conduct accelerated life testing, as part of the RMMV Reliability Growth Program.</p>	8.954 0	8.941 0	13.644 0	-	13.644 0
<p>Title: Support:</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Provide engineering, logistic and programmatic support for RMMV accelerated life and confidence testing.</p> <p>FY 2011 Plans: Provide engineering, logistic and programmatic support for RMMV accelerated life and confidence testing.</p> <p>FY 2012 Base Plans: Provide engineering, logistic and programmatic support for RMMV accelerated life and confidence testing.</p>	1.513 0	3.000 0	7.706 0	-	7.706 0
<p>Title: T&E:</p> <p align="right">Articles:</p>	-	7.250 0	27.689 0	-	27.689 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2011 Plans:</i> Conduct component and system testing in support of the Reliability Growth Program.					
<i>FY 2012 Base Plans:</i> Conduct component and system testing in support of the Reliability Growth Program.					
<i>Title:</i> Management:					
<i>Articles:</i>	0.500 0	0.500 0	1.004 0	-	1.004 0
<i>FY 2010 Accomplishments:</i> Provided program management and travel for RMMV Spiral testing.					
<i>FY 2011 Plans:</i> Provided program management and travel for RMMV Spiral testing.					
<i>FY 2012 Base Plans:</i> Provided program management and travel for RMMV Spiral testing.					
Accomplishments/Planned Programs Subtotals	10.967	19.691	50.043	-	50.043

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2622: <i>Minesweeping System Replacement</i>	0.000	5.027	0.000	0.000	0.000	0.000	0.000	17.989	17.204	Continuing	Continuing
• OPN/1600: <i>LCS Modules</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.300	61.032	Continuing	Continuing

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. Acquisition Decision Memorandum (ADM) dated 01 Jun 2010 issued by USD (AT&L) declared the program as being post-MS B. Conduct reliability improvement program to return to OT in FY12.

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E. Performance Metrics

Complete RGP.
Complete DT and OT.
Begin FRP in FY14.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development & Integration 1	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	97.283	-		-		-		-	0.000	97.283	
Hardware Development & Integration 2	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	95.993	-		-		-		-	0.000	95.993	
Hardware Development & Integration	WR	NSWC. PC: PANAMA CITY, FL	7.140	-		-		-		-	0.000	7.140	
Systems Engineering 1	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	5.465	-		-		-		-	0.000	5.465	
Systems Engineering 2	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	10.211	6.000	Dec 2010	8.555	Dec 2011	-		8.555	Continuing	Continuing	Continuing
Systems Engineering 3	WR	NSWC, PC: PANAMA CITY, FL	2.353	2.941	Nov 2010	5.089	Nov 2011	-		5.089	Continuing	Continuing	Continuing
Award Fees	SS/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	5.485	-		-		-		-	0.000	5.485	
Subtotal			223.930	8.941		13.644		-		13.644			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development 1	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	7.092	-		-		-		-	0.000	7.092	
Software Development 2	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	6.961	-		-		-		-	0.000	6.961	
Software Development 3	WR	NSWC, PC: RIVIERA BEACH, FL	2.142	-		-		-		-	0.000	2.142	

UNCLASSIFIED

UNCLASSIFIED

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ILS 1	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	17.836	-		-		-		-	0.000	17.836	
ILS 2	SS/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	-	2.000	Dec 2010	5.196	Dec 2011	-		5.196	Continuing	Continuing	Continuing
ILS 3	WR	NSWC, PC: PANAMA CITY, FL	4.057	1.000	Nov 2010	2.510	Nov 2011	-		2.510	0.000	7.567	
ILS 4	WR	VARIOUS:VARIOUS	1.125	-		-		-		-	0.000	1.125	
Ship Integration 1	SS/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	1.258	-		-		-		-	0.000	1.258	
Ship Integration 2	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	11.938	-		-		-		-	0.000	11.938	
Ship Integration 3	Various	VARIOUS:VARIOUS	13.714	-		-		-		-	0.000	13.714	
Subtotal			66.123	3.000		7.706		-		7.706			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation 1	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	18.470	-		-		-		-	0.000	18.470	
Developmental Test & Evaluation 2	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	25.171	2.500	Dec 2010	4.032	Dec 2011	-		4.032	0.000	31.703	
Developmental Test & Evaluation 3	WR	NSWC, PC: PANAMA CITY, FL	9.244	4.750	Nov 2010	23.657	Nov 2011	-		23.657	0.000	37.651	
Developmental Test & Evaluation 4	WR	COTF: NORFOLK, VA	0.300	-		-		-		-	0.000	0.300	

UNCLASSIFIED

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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation 5	WR	VARIOUS:VARIOUS	5.298	-		-		-		-	0.000	5.298	
Subtotal			58.483	7.250		27.689		-		27.689	0.000	93.422	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	LOCKHEED MARTIN:RIVIERA BEACH, FL	6.569	-		-		-		-	0.000	6.569	
Government Engineering Support1	WR	NSWC, PC: PANAMA CITY, FL	22.996	-		-		-		-	0.000	22.996	
Government Engineering Support2	WR	NSWC, PC: PANAMA CITY, FL	0.187	0.050	Nov 2010	0.134	Nov 2011	-		0.134	0.000	0.371	
Program Management Support	C/CPFF	CACI: WASHINGTON, DC	4.358	-		-		-		-	0.000	4.358	
Travel	WR	NAVSEA: WNY, DC	0.616	0.050	Nov 2010	0.118	Nov 2011	-		0.118	0.000	0.784	
SBIR Assessment	WR	VARIOUS:VARIOUS	6.761	0.400	Jan 2011	0.752	Jan 2012	-		0.752	0.000	7.913	
Subtotal			41.487	0.500		1.004		-		1.004	0.000	42.991	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		390.023	19.691		50.043		-	50.043			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 0260: <i>Remote Minehunting Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0260				
Milestones: Nunn-McCurdy Breach	1	2010	1	2010
Milestones: Nunn-McCurdy Certification	3	2010	3	2010
Milestones: Milestone C	3	2014	3	2014
Events: Contract Awards: BOA Award	1	2010	1	2010
Events: Contract Awards: RGP Completion Contract	1	2012	1	2012
Events: Contract Awards: LRIP Award	4	2014	4	2014
Events: Reliability Growth Program: Reliability Growth Program	2	2010	1	2014
Events: Reliability Growth Program: DT/OA	2	2014	2	2014
Events: In-Water Testing: V4.1 Baseline Improvements	1	2010	4	2011
Events: In-Water Testing: V4.2 Improvements	4	2010	2	2013
Events: In-Water Testing: V4.3 Improvements	2	2013	2	2014
Deliveries: LRIP 8	4	2010	4	2010
Deliveries: 2 LRIPs	4	2016	4	2016

UNCLASSIFIED

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1233: <i>Surface MCM Mid-life Upgrade</i>	20.922	13.479	25.593	-	25.593	30.268	26.255	19.593	19.758	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(1) AN/SQQ-32(V)4 High-Frequency, Wide Band (HFWB) is a technology upgrade to the AN/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 AN/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).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MCM CES/PRODUCT DEVELOPMENT:	0.154	0.100	0.120	-	0.120
Articles:	0	0	0		0
FY 2010 Accomplishments: Development of CES functionality in a MEDAL EA environment.					
FY 2011 Plans: Development of CES functionality in a MEDAL EA environment.					
FY 2012 Base Plans: Development of CES functionality in a MEDAL EA environment.					
Title: MCM CES/SUPPORT:	0.076	0.069	0.083	-	0.083
Articles:	0	0	0		0
FY 2010 Accomplishments: 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,					

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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adaptability, and flexibility required for modern MCM operations. Validate Fleet usability of Planning on Risk (PoR) module.

FY 2011 Plans:

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 2012 Base Plans:

Continue introduction of capability and Planning on Risk (PoR) functionality via a limited fielding to Fleet Users including Mine Counter Measures Squadrons (MCMRONs) and Naval Mine and Anti Submarine Warfare Command (NMAWC).

Title: MCM CES/TEST AND EVALUATION:	0.127	0.126	0.151	-	0.151
Articles:	0	0	0		0

FY 2010 Accomplishments:

Conduct integration testing with MEDAL EA v1.

FY 2011 Plans:

Conduct integration testing with MEDAL EA v1.

FY 2012 Base Plans:

Conduct integration testing with MEDAL EA v1.

Title: MCM CES/MANAGEMENT:	0.026	0.026	0.031	-	0.031
Articles:	0	0	0		0

FY 2010 Accomplishments:

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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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.

FY 2011 Plans:
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.

FY 2012 Base Plans:
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 will include briefings, demonstrations, and project planning as required.

Title: HFWB/PRODUCT DEVELOPMENT:	2.313	1.612	1.552	-	1.552
Articles:	0	0	0		0

FY 2010 Accomplishments:
Began system engineering, requirements analysis and design for AN/SQQ-32(V)4 HFWB P3I to include through the Sensor effort.

FY 2011 Plans:
FY11 continue system engineering, requirements analysis, design and development for AN/SQQ-32(V)4 HFWB P3I effort.

FY 2012 Base Plans:
FY12 continue system engineering, requirements analysis, design and development for AN/SQQ-32(V)4 HFWB P3I effort.

Title: HFWB/SUPPORT:	0.370	0.353	0.342	-	0.342
Articles:	0	0	0		0

FY 2010 Accomplishments:
Began software requirements, configuration, and software integration for AN/SQQ-32(V)4 HFWB P3I effort.

FY 2011 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Testing and evaluation support for limited fielding of Tactical Server (Iteration 5). Continue and complete development of Iteration 6. Initial Domain Analysis of Iteration 7.						
Title: MEDAL/SUPPORT:						
	Articles:	0.466 0	0.435 0	0.474 0	-	0.474 0
FY 2010 Accomplishments: 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 2011 Plans: 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 2012 Base Plans: 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.						
Title: MEDAL/TEST AND EVALUATION:						
	Articles:	1.322 0	1.965 0	2.908 0	-	2.908 0
FY 2010 Accomplishments: Conduct Testing on Iteration 4.						
FY 2011 Plans: Conduct Testing on Iteration 5.						
FY 2012 Base Plans: Conduct DT and initial operational suitability activities with Mine Counter Measures Squadrons (MCMRONs) and Naval Mine and Anti Submarine Warfare Command (NMAWC).						
Title: MEDAL/MANAGEMENT:						
		0.572	0.519	0.768	-	0.768

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0	0		0
<p><i>FY 2010 Accomplishments:</i> 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.</p> <p><i>FY 2011 Plans:</i> 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.</p> <p><i>FY 2012 Base Plans:</i> 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 MIEW, 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.</p>					
<p>Title: US3/PRODUCT DEVELOPMENT:</p> <p style="text-align: right;">Articles:</p>	2.134 0	0.780 0	9.564 0	-	9.564 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p><i>FY 2010 Accomplishments:</i> Preparation of Milestone B documentation.</p> <p><i>FY 2011 Plans:</i> Continue Milestone B documentation. Complete risk reduction tasks.</p> <p><i>FY 2012 Base Plans:</i> Conduct Milestone B. Begin engineering and manufacturing development phase.</p>					
<p>Title: US3/SUPPORT:</p> <p align="right">Articles:</p>	3.079 0	1.847 0	1.273 0	-	1.273 0
<p><i>FY 2010 Accomplishments:</i> Engineering and ILS support for Milestone B documentation.</p> <p><i>FY 2011 Plans:</i> Engineering and ILS support for Milestone B documentation.</p> <p><i>FY 2012 Base Plans:</i> Completion of Milestone B.</p>					
<p>Title: US3/TEST AND EVALUATION:</p> <p align="right">Articles:</p>	3.848 0	0.809 0	1.800 0	-	1.800 0
<p><i>FY 2010 Accomplishments:</i> Sweep Cable development and testing. Test and Evaluation Master Plan (TEMP) preparation. Sweep Power System (SPS) development and testing. Corrected deficiencies for Mission Module compatibility.</p> <p><i>FY 2011 Plans:</i> SPS final test. Continue TEMP development.</p> <p><i>FY 2012 Base Plans:</i> Complete TEMP. Technology Development testing.</p>					
<p>Title: US3/MANAGEMENT:</p> <p align="right">Articles:</p>	1.037 0	0.894 0	1.540 0	-	1.540 0
<p><i>FY 2010 Accomplishments:</i></p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Program support and management necessary to monitor contractor progress; review system capabilities; monitor cost and schedule; monitor contractor deliverables. FY 2011 Plans: Program support for Milestone B documentation. FY 2012 Base Plans: Complete Milestone B in 1st Qtr; Support the award of the engineering and manufacturing development contract in the 2nd Qtr.					
Accomplishments/Planned Programs Subtotals	20.922	13.479	25.593	-	25.593

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2622: LV075/LV078/LV080	49.108	43.018	10.114	0.000	10.114	6.219	10.382	7.641	8.040	0.000	134.522

D. Acquisition Strategy

HFVB - Naval Surface Warfare Center, Panama City (NSWC, PC) and ARL UT designed and developed the HFVB 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 (COMINEWARCOM)). 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.

US3- The Unmanned Surface Sweep System (US3) effort was transferred from ONR to PMS495 in FY07. Program transferred to PMS403 in FY09 and transitioned into PMS406 in FY10. PMS406 will award an Engineering and Manufacturing Development (EMD) contract to continue development of the system. US3 will be capable of sweeping mines in the littoral waters. The EMD phase will include a Milestone C and Low Rate Initial Production (LRIP) award in FY14 and a Full Rate Production Decision Review (FRPDR) in FY16.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

E. Performance Metrics

- Successfully reach Milestone B in FY12
- Complete Critical Design Review (CDR) in FY13
- Successfully reach Milestone C in FY14

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP: Develop Bottom Sediment Classifier	WR	NRL:WASHINGTON, DC	0.258	-		-		-		-	0.000	0.258	
Systems Engineering and Integration	WR	NSWC, PC: PANAMA CITY, FL	0.306	-		-		-		-	0.000	0.306	
System Development 1	WR	NSWC, PC: SAN DIEGO, CA	0.373	-		-		-		-	0.000	0.373	
Systems Engineering 2	WR	NSWC, PC: PANAMA CITY, FL	2.915	-		-		-		-	0.000	2.915	
Systems Engineering 3 MCM CES	WR	NSWC, PC: PANAMA CITY, FL	1.288	0.100	Nov 2010	0.120	Nov 2011	-	Nov 2011	0.120	Continuing	Continuing	Continuing
HFWB: Primary Hardware Development 1	C/CPAF	NSWC, PC/ARL UT: FLORIDA/TEXAS	15.511	-		-		-		-	0.000	15.511	
Primary Hardware Development 2	WR	ARL-UT: AUSTIN, TX	-	-		-		-		-	0.000	0.000	
HFWB: Tow Cable Development	C/CPAF	NSWC, PC/ARL UT: FLORIDA/TEXAS	1.399	-		-		-		-	0.000	1.399	
HFWB: Ship Integration	WR	NSWC, PC: PANAMA CITY, FL	1.697	-		-		-		-	0.000	1.697	
HFWB: SYSTEM ENGINEER	C/CPAF	NSWC/ARL UT: FLORIDA/TEXAS	2.313	1.612	Nov 2010	1.552	Nov 2011	-		1.552	0.000	5.477	
Software Development Medal	C/CPFF	SAIC: SAN DIEGO, CA	22.135	3.708	Nov 2010	4.767	Nov 2011	-		4.767	0.000	30.610	
US3: Product Development 1	C/CPFI	ITT: PANAMA CITY, FL	5.198	-		-		-		-	0.000	5.198	
US3: Product Development 2	WR	NSWC, PC: PANAMA CITY, FL	1.460	0.350	Nov 2010	-		-		-	0.000	1.810	
US3: Product Development 3	C/CPAF	TBD: TBD	-	0.430	Dec 2010	9.564	Dec 2011	-		9.564	0.000	9.994	
Subtotal			54.853	6.200		16.003		-		16.003			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop Logistics Products	WR	NSWC, PC: PANAMA CITY, FL	0.160	-		0.083	Nov 2011	-		0.083	0.000	0.243	
Software Development 1	C/CPFF	SAIC: SAN DIEGO, CA	0.350	-		-		-		-	0.000	0.350	
Software Development 2	C/CPFF	SAIC: SAN DIEGO, CA	0.845	0.069	Nov 2010	-		-		-	0.000	0.914	
HFWB Software Development	WR	NSWC, PC/ARL-UT: FLORIDA/TEXAS	6.465	0.300	Nov 2010	0.300	Nov 2011	-		0.300	0.000	7.065	
HFWB Integrated Logistics Support	WR	NSWC, PC: PANAMA CITY, FL	2.670	0.053	Nov 2010	0.042	Nov 2011	-		0.042	0.000	2.765	
Software Engineering 1	WR	SPAWAR: SAN DIEGO, CA	0.572	0.206	Nov 2010	0.644	Nov 2011	-		0.644	0.000	1.422	
Software Engineering 2	WR	NSWC, PC: PANAMA CITY, FL	0.693	0.229	Nov 2010	-		-		-	0.000	0.922	
US3: Engineering 1	C/CPAF	ITT: PANAMA CITY, FL	2.277	-		-		-		-	0.000	2.277	
US3: Integrated Logistics 1	C/CPAF	ITT: PANAMA CITY, FL	1.408	-		-		-		-	0.000	1.408	
US3: Engineering 2	WR	NSWC, PC: PANAMA CITY, FL	3.824	0.788	Nov 2010	1.000	Nov 2011	-		1.000	0.000	5.612	
US3: Integrated Logistics 2	WR	NSWC, PC: PANAMA CITY, FL	2.227	0.318	Nov 2010	0.273	Nov 2011	-		0.273	0.000	2.818	
US3: Engineering 3	C/CPAF	TBD: TBD	-	0.741	Dec 2010	-		-		-	0.000	0.741	
Subtotal			21.491	2.704		2.342		-		2.342	0.000	26.537	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL Test and Evaluation	C/FP	SAIC: San Diego, CA	-	-		2.908	Nov 2011	-		2.908	0.000	2.908	
Test and Evaluation 1	C/CPAF	VARIOUS: VARIOUS	0.347	0.126	Nov 2010	0.151	Nov 2011	-		0.151	0.000	0.624	
HFWB: Developmental Test and Evaluation	WR	NSWC, PC/ARL-UT: FLORIDA/TEXAS	3.999	0.100	Nov 2010	0.100	Nov 2011	-		0.100	0.000	4.199	
Test and Evaluation 2	C/CPAF	VARIOUS: VARIOUS	1.952	1.965	Dec 2010	-		-		-	0.000	3.917	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
US3: Test and Evaluation 3	C/CPIF	ITT: PANAMA CITY, FL	2.118	-		-		-		-	0.000	2.118	
US3: Test and Evaluation 4	WR	NSWC, PC: PANAMA CITY, FL	3.346	0.809	Nov 2010	1.080	Nov 2011	-		1.080	0.000	5.235	
US3: Test and Evaluation 5	WR	NSWC, CCD: WEST BETHESDA, MD	-	-		0.720	Nov 2011	-		0.720	0.000	0.720	
Subtotal			11.762	3.000		4.959		-		4.959	0.000	19.721	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support 1	C/CPFF	CACI: WASHINGTON, DC	0.263	-		-		-		-	0.000	0.263	
Travel 1	WR	NAVSEA: WNY, DC	0.084	-		-		-		-	0.000	0.084	
Government Engineering Support1	WR	NSWC, PC: PANAMA CITY, FL	0.271	-		0.031	Nov 2011	-		0.031	0.000	0.302	
MEDAL Program Management Support 2	Various	VARIOUS: VARIOUS	0.157	-		0.598	Nov 2011	-		0.598	0.000	0.755	
SBIR Assessment 2	Various	VARIOUS: VARIOUS	0.019	-		-		-		-	0.000	0.019	
Program Management Support 3	C/CPFF	CACI: WASHINGTON, DC	1.120	0.221	Feb 2011	-		-		-	0.000	1.341	
US3: Contractor Management 3	WR	ITT: PANAMA CITY, FL	0.776	-		-		-		-	0.000	0.776	
US3: Government Management Support2	WR	VARIOUS: VARIOUS	2.058	0.620	Nov 2010	1.140	Nov 2011	-		1.140	0.000	3.818	
US3: Travel 2	WR	NAVSEA: WNY, DC	0.075	0.025	Nov 2010	0.100	Nov 2011	-		0.100	0.000	0.200	
Program Management Support 4	C/CPFF	CACI: WASHINGTON, DC	0.080	-		-		-		-	0.000	0.080	
Government Engineering Support3	WR	NSWC, PC: PANAMA CITY, FL	0.090	-		-		-		-	0.000	0.090	
Travel 3	C/CPAF	NAVSEA: WNY, DC	0.256	-		-		-		-	0.000	0.256	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support 5	C/CPFF	CACI:WASHINGTON, DC	0.141	0.026	Nov 2010	-		-		-	0.000	0.167	
Government Engineering Support4	WR	NSWC, PC: PANAMA CITY, FL	0.010	-		-		-		-	0.000	0.010	
Travel4	C/CPAF	NSWC, PC: PANAMA CITY, FL	0.069	-		-		-		-	0.000	0.069	
HFWB: Program Management Support 6	C/CPAF	VARIOUS:VARIOUS	1.242	0.126	Jan 2011	0.110	Jan 2012	-		0.110	0.000	1.478	
HFWB: Government Engineering Support5	WR	NSWC, PC: PANAMA CITY, FL	0.750	-		-		-		-	0.000	0.750	
HFWB: Travel 5	C/CPAF	NAVSEA:WNY, DC	0.050	0.010	Nov 2010	0.010	Nov 2011	-		0.010	0.000	0.070	
Government Engineering Support6	WR	NSWC, PC: PANAMA CITY, FL	1.078	0.274	Nov 2010	-		-		-	0.000	1.352	
Travel 6	C/CPAF	NAVSEA:WNY, DC	0.214	0.024	Nov 2010	-		-		-	0.000	0.238	
SBIR Assessment 6	Various	VARIOUS:VARIOUS	0.054	-		-		-		-	0.000	0.054	
Program Management Support 7	C/CPAF	VARIOUS:VARIOUS	0.350	-		-		-		-	0.000	0.350	
US3: Contractor Management 7	C/CPAF	TBD:TBD	-	0.249	Dec 2010	0.300	Nov 2011	-		0.300	0.000	0.549	
Acquisition Workforce Fund	Various	VARIOUS:VARIOUS	0.122	-		-		-		-	0.000	0.122	
Subtotal			9.329	1.575		2.289		-		2.289	0.000	13.193	
Project Cost Totals			97.435	13.479		25.593		-		25.593			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
US3				
Acquisition Milestones: Milestones: Milestone B	1	2012	1	2012
Acquisition Milestones: Milestones: Milestone C	3	2014	3	2014
Acquisition Milestones: Milestones: Full Rate Production Decision Review	2	2016	2	2016
Acquisition Milestones: Milestones: Initial Operational Capability	4	2016	4	2016
System Development: Milestone Documentation: Milestone B Documentation	1	2010	4	2011
System Development: Engineering & Manufacturing Development Phase: E&MD Contract Award	2	2012	2	2012
System Development: Engineering & Manufacturing Development Phase: Engineering & Manufacturing Development phase	2	2012	2	2014
System Development: Reviews: PDR Decision	3	2012	3	2012
System Development: Reviews: CDR Decision	1	2013	1	2013
Test and Evaluation: Test Events: DT Testing	1	2010	1	2010
Test and Evaluation: Test Events: Operational Assessment	2	2014	2	2014
Test and Evaluation: Test Events: Initial Operation Test and Evaluation	3	2015	2	2016
Production Milestones: Low Rate Initial Production: LRIP Contract Award	3	2014	3	2014
Production Milestones: Low Rate Initial Production: LRIP phase	4	2014	2	2015
Production Milestones: Full Rate Production: FRP phase	2	2016	4	2016
HFWB				
Acquisition Milestones: Milestones: Milestone C	3	2010	3	2010
Acquisition Milestones: Milestones: FRPDR	3	2010	3	2010
System Development: P3I: P3I	2	2010	4	2016
Test and Evaluation: EQT Testing: EQT Testing	1	2010	1	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 1233: <i>Surface MCM Mid-life Upgrade</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Award: Contract Award	4	2010	4	2010
Production Milestones: Full Rate Production: FRP	4	2010	4	2013
Deliveries: Intallation: Installation	4	2011	2	2015
MEDAL				
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 3	1	2010	1	2010
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 4	2	2010	1	2011
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 5	3	2010	4	2011
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 5 Tactical Server	4	2011	4	2011
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 6	4	2011	3	2012
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 7	4	2012	3	2013
System Development: MEDAL EA v.2 Development: EA v.2 Development	1	2014	4	2016
Test and Evaluation: Enterprise Arch (EA) v.1: Enterprise Arch (EA) v.1 Development and Test	1	2010	4	2013
Test and Evaluation: Enterprise Arch (EA) v.1: EA v.1 Operational Assessment (OA)	4	2013	4	2013
MCM CES				
Acquisition Milestones: Milestones: IOC	4	2011	4	2011
System Development: Future Development: MCM CES Future Development	1	2012	4	2016
Test and Evaluation: Build 1: Build 1 Development and Test	1	2010	1	2011
Test and Evaluation: Build 1: Build 1 Integration and Test (Fleet Trial)	2	2011	3	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2131: <i>Assault Breaching System</i>	29.652	31.245	49.200	-	49.200	58.906	58.517	32.905	17.697	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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) - Far term - Counter Mine System (CMS) - transitioned from a 6.3 S&T Concept Demonstration effort to a 6.4 development program after a concept decision/AoA in FY06. CMS provides a near surface neutralization capability to the Navy.

ISR/T - Coastal Battlefield Reconnaissance and Analysis (COBRA) is the ISR/T part of the ABS of systems. This system provides Airborne Mine Countermeasures (AMCM) capability and 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, providing AMCM capability.

Precision Navigation/Virtual Marking (PN/M)- 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 : Modernize 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Product Development:</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: CMS - Conduct Preliminary Design Review (PDR). Down selection of High Explosive (HE) alternate neutralizer and solid reactive material neutralizer at PDR, eliminated liquid reactive neutralizer candidates. Began CMS live dart testing with emphasis on aero-dynamics and structure. Conduct CMS Technical Reviews.</p> <p>COBRA - Began Blk I VTUAV Integration Flight Tests. COBRA BLK II Transition from ONR. Procure (5) Precision Navigation/Marking (PN/M) Systems to support AAV/Augmented Reality Virtual Common Operational Picture (ARVCOP) efforts. Begin COBRA Tactical Littoral Sensor (TLS) SBIR effort. Begin COBRA Post Mission Analysis (PMA) Algorithm and Graphical User Interface (GUI) Enhancements. Begin COBRA BLK I producibility and obsolescence effort.</p> <p>FY 2011 Plans: CMS - Continue live dart/neutralizer testing with emphasis on aero-dynamics and structures. Begin CMS neutralizer lethality design and testing (100 darts).</p> <p>COBRA - Complete BLK I integration Flight Tests with VTUAV. Begin COBRA Blk II design and development capability.</p> <p>Precision Navigation/Marking (PN/M) - Continue evaluation/assessment of EDMs supporting PN/M efforts.</p> <p>FY 2012 Base Plans: CMS - Continue the design and development and conduct CMS neutralizer formal down selection between high explosive (HE) neutralizer and solid reactive material neutralizer. Prepare for Critical Design Review (CDR).</p> <p>COBRA - Continue design and development of COBRA Block II capability.</p>	23.728 0	25.647 0	38.579 0	-	38.579 0
<p>Title: Technical Support:</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments:</p>	1.260 0	0.926 0	0.644 0	-	0.644 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>CMS/COBRA - Provide mine magazine inventory management and shipping, contract management and test/studies, C4I/Data Fusion. Provide technical/acquisition support and documentation (ILS, training, data, drawings).</p> <p>FY 2011 Plans: CMS/COBRA - Provide mine magazine inventory management and shipping, contract management and test/studies, C4I/Data Fusion. Provide technical/acquisition support and documentation (ILS, training, data, drawings). Cobra achieve Blk II Milestone B decision.</p> <p>FY 2012 Base Plans: CMS/COBRA - Provide mine magazine inventory management and shipping, contract management and test/studies, C4I/Data Fusion. Provide technical/acquisition support and documentation (ILS, training, data, drawings).</p>					
<p>Title: Test and Evaluation:</p> <p align="right">Articles:</p>	3.126 0	3.235 0	8.599 0	-	8.599 0
<p>FY 2010 Accomplishments: CMS - Began Live dart aero-dynamics and structural testing.</p> <p>COBRA - Began Blk 1 Integration Flight Test. Began COBRA Blk I Tactical Littoral Sensor (TLS) test. Began JABS Live Mine Tests (Very Shallow Water (VSW) and Near Surface Mines).</p> <p>PN/M - Demonstrate the Precision Navigation and Marking design capability.</p> <p>FY 2011 Plans: CMS - Begin CMS Lethality Testing in support of Neutralizer Down-Select between the two darts.</p> <p>PN/M - Continue to test the Precision Navigation and Marking design capability.</p> <p>FY 2012 Base Plans: CMS - Continue CMS Lethality Testing in support of Neutralizer Down-Select between the two darts. Tests against different mines in different conditions to determine the final dart design and lethality.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
COBRA - Conduct Blk I Initial Operational Test and Evaluation (IOT&E) and flight test on the VTUAV.					
Title: Management:	1.538	1.437	1.378	-	1.378
Articles:	0	0	0		0
FY 2010 Accomplishments: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
FY 2011 Plans: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
FY 2012 Base Plans: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
Accomplishments/Planned Programs Subtotals	29.652	31.245	49.200	-	49.200

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2624: <i>SHALLOW WATER MCM SHIP</i>	7.811	9.236	1.048	0.000	1.048	6.053	6.159	6.205	26.136	0.000	62.648
• OPN/1600: <i>LCS MODULES</i>	0.000	4.095	4.165	0.000	4.165	4.235	4.307	8.761	4.455	0.000	30.018
• WPN/4225: <i>AIRBORNE MCM</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.730	44.750	75.413	0.000	120.893

D. Acquisition Strategy

Countermine/Counter Obstacle (CM/CO) is a two phased approach, near term and far term solutions. The near term approach for CM/CO is JDAM Assault Breaching System (JABS) and ABS Tactical Decision Aid 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 4th QTR 08.

Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I achieved MS C in 3rd QTR FY09. COBRA Block II technology will transfer from ONR and achieve MS B in 1st QTR FY10. COBRA Block III technology will transition in FY12 with a MS B decision scheduled for 4th QTR FY15.

Precision Navigation/Virtual Marking (PN/M) - 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 4th QTR FY10.

E. Performance Metrics

Successful COBRA integration, flight tests and Operational Assessment (OA) into the Vertical Take-off Unmanned Aerial Vehicle (VTUAV). CMS successful design analysis with the down selection of the dart and provide a near surface neutralization capability to the fleet.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev, COBRA	C/CPAF	NORTHROP GRUMMAN:MELBOURNE, FL	108.593	4.669	Feb 2011	7.045	Nov 2011	-		7.045	0.000	120.307	
Primary Hardware Dev, CMS	C/CPAF	Boeing:St. Louis, MO	37.701	13.487	Feb 2011	22.255	Nov 2011	-		22.255	0.000	73.443	
Ancillary Hardware Dev, JABS	C/CPAF	Unknown:Unknown	9.222	-		3.214	Feb 2012	-		3.214	0.000	12.436	
Systems Engineering, COBRA	WR	NSWC, PC: PANAMA CITY, FL	17.283	3.577	Nov 2010	-		-		-	0.000	20.860	
Software Dev, COBRA	WR	NAVAIR:SAN DIEGO, CA	12.858	0.100	Nov 2010	-		-		-	0.000	12.958	
Systems Engineering, CMS	WR	NSWC, IH: INDIAN HEAD, MD	23.893	1.603	Nov 2010	1.703	Nov 2011	-		1.703	Continuing	Continuing	Continuing
Training Dev, COBRA	WR	NSWC, IH: NDIAN HEAD, MD	5.216	0.745	Nov 2010	0.845	Nov 2011	-		0.845	0.000	6.806	
Tooling	WR	NSWC, IH: NDIAN HEAD, MD	0.860	-		-		-		-	0.000	0.860	
ABS IPT/Test Assets/Proj Eng	WR	NSWC, IH: NDIAN HEAD, MD	6.478	0.317	Nov 2010	0.417	Nov 2011	-		0.417	0.000	7.212	
Precision Navigation & Marking	WR	NSWC, IH: NDIAN HEAD, MD	3.792	1.149	Nov 2010	3.100	Nov 2011	-		3.100	0.000	8.041	
Subtotal			225.896	25.647		38.579		-		38.579			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support Equipment	WR	NSWC, PC: PANAMA CITY, FL	14.952	0.662	Nov 2010	1.153	Nov 2011	-		1.153	0.000	16.767	
Software Development	WR	NSWC, PC: PANAMA CITY, FL	8.037	-		-		-		-	0.000	8.037	
Integrated Logistics Support	WR	NSWC, IH: NDIAN HEAD, MD	2.712	-		-		-		-	0.000	2.712	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Configuration Management	WR	NSWC, PC: PANAMA CITY, FL	3.744	-		-		-		-	0.000	3.744	
Technical Data	WR	NSWC, PC: PANAMA CITY, FL	2.588	-		-		-		-	0.000	2.588	
Studies & Analysis	WR	NSWC, PC: PANAMA CITY, FL	4.788	0.182	Nov 2010	0.225	Nov 2011	-		0.225	0.000	5.195	
GFE	WR	NSWC, PC: PANAMA CITY, FL	0.400	-		-		-		-	0.000	0.400	
Subtotal			37.221	0.844		1.378		-		1.378	0.000	39.443	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NSWC, IH: NDIAN HEAD, MD	30.326	0.147	Nov 2010	6.207	Nov 2011	-		6.207	0.000	36.680	
Operational Test & Evaluation	WR	NSWC/ IH, PC: NDIAN HEAD, PANAMA CITY	8.655	-		-		-		-	0.000	8.655	
Tooling	WR	NSWC/ IH, PC: NDIAN HEAD, PANAMA CITY	0.700	-		-		-		-	0.000	0.700	
GFE	WR	NSWC/ IH, PC: NDIAN HEAD, PANAMA CITY	0.400	-		-		-		-	0.000	0.400	
Development Test	C/FP	NSWC PC: Panama City, FL	-	-		2.392	Nov 2011	-		2.392	0.000	2.392	
Subtotal			40.081	0.147		8.599		-		8.599	0.000	48.827	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 2131: <i>Assault Breaching System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Assault Breaching System				
Acquisition Milestones: CMS: PDR - Preliminary Design Review	2	2010	2	2010
Acquisition Milestones: CMS: CDR - Critical Design Review	2	2013	2	2013
Acquisition Milestones: COBRA: COBRA Block II Milestone B	2	2011	2	2011
Acquisition Milestones: COBRA: COBRA Block III Milestone B	4	2016	4	2016
Acquisition Milestones: COBRA: LRIP Decision Review	2	2011	2	2011
Acquisition Milestones: COBRA: FRP Decision Review	2	2013	2	2013
System Development: CMS: CMS System Development 6.4	1	2010	4	2016
System Development: CMS: CMS System Design/Platform Integration	1	2010	4	2016
System Development: COBRA Block II SD&D: COBRA Block II SD&D	4	2011	4	2016
System Development: ISR/Navigation/C4I System Development: ISR/Navigation/C4I System Development	1	2010	4	2016
Production Milestones: COBRA Block I Production (With Options): COBRA Block I Production (With Options)	2	2011	4	2015
Deliveries: COBRA: Schedule Detail	2	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 3123: <i>SMCM UUV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3123: <i>SMCM UUV</i>	15.030	12.732	17.821	-	17.821	21.533	11.151	2.484	2.587	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) procures 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: SMCM UUV LFBB</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: LFBB development continues in FY10.</p> <p>FY 2011 Plans: Milestone B. Development Contract Award. Preliminary Design Review (PDR).</p> <p>FY 2012 Base Plans: Critical Design Review and vehicle fabrication.</p>	13.619 0	12.132 0	17.221 0	-	17.221 0
<p>Title: SMCM UOES</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: System Acceptance Test of SMCM UUV-2. Fleet and Homeland Defense exercises.</p> <p>FY 2011 Plans: Fleet training. Continue support of fleet exercises.</p> <p>FY 2012 Base Plans: Support fleet exercises.</p>	1.411 0	0.600 0	0.600 0	-	0.600 0
Accomplishments/Planned Programs Subtotals	15.030	12.732	17.821	-	17.821

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 3123: <i>SMCM UUV</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/2622: <i>Minesweeping Sys Replacement, LV079</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	29.021	29.602	0.000	58.623
• OPN/1600: <i>LCS MODULES, LM001</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.810	21.164	0.000	41.974

D. Acquisition Strategy

An acquisition program will be initiated in FY11 to develop Surface Mine Countermeasure Unmanned Undersea Vehicles (SMCM UUV) equipped with Low Frequency Broadband (LFBB) sonar that provides buried mine detection capability. Initial procurement of the SMCM UUV with LFBB begins in FY15.

E. Performance Metrics

Successful Milestone C in Q2 FY15.
Reach Full Rate Production Decision in Q2 FY16.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 3123: <i>SMCM UUV</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SMCM UOES Development	C/CPAF	BLUEFIN:CAMBRIDGE, MA	14.244	0.600	Dec 2010	0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing
SMCM UUV Development	C/CPAF	TBD:TBD	19.455	7.378	Mar 2011	12.279	Dec 2011	-		12.279	Continuing	Continuing	Continuing
Software Development	WR	NSWC, PC: PANAMA CITY, FL	0.805	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			34.504	7.978		12.879		-		12.879			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support 1	WR	NSWC, PC: PANAMA CITY, FL	6.286	2.313	Dec 2010	2.535	Dec 2011	-		2.535	Continuing	Continuing	Continuing
Engineering Support 2	WR	NUWC, Newport: NEWPORT, RI	1.602	0.813	Dec 2010	0.829	Dec 2011	-		0.829	Continuing	Continuing	Continuing
Engineering Support 3	WR	VARIOUS: VARIOUS	0.808	0.350	Dec 2010	0.543	Dec 2011	-		0.543	Continuing	Continuing	Continuing
Subtotal			8.696	3.476		3.907		-		3.907			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NOMWC: STENNIS, MI	0.313	0.143	Dec 2010	0.146	Dec 2011	-		0.146	Continuing	Continuing	Continuing
Government T&E Support	WR	VARIOUS: VARIOUS	0.775	0.210	Dec 2010	0.214	Dec 2011	-		0.214	Continuing	Continuing	Continuing
Test and Evaluation	WR	COMOPTEVFOR: NORFOLK, VA	0.141	0.125	Dec 2010	0.125	Dec 2011	-		0.125	Continuing	Continuing	Continuing
Subtotal			1.229	0.478		0.485		-		0.485			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 3123: <i>SMCM UUV</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 3123: <i>SMCM UUV</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SMCM UUV				
SMCM UUV UOES: Dual Frequency SAS Development: Dual Frequency SAS Development	1	2010	1	2011
SMCM UUV UOES: Dual Freq SAS Fleet Experimentation: Dual Frequency SAS Fleet Experimentation	1	2011	4	2012
SMCM UUV Acquisition Program: SMCM UUV Milestone B: SMCM UUV Milestone B	2	2011	2	2011
SMCM UUV Acquisition Program: SMCM UUV Contract Award: SMCM UUV Contract Award	2	2011	2	2011
SMCM UUV Acquisition Program: SMCM UUV/SMCM Development: SMCM UUV/SMCM Development	2	2011	1	2015
SMCM UUV Acquisition Program: SMCM UUV Milestone C: SMCM UUV Milestone C	2	2015	2	2015
SMCM UUV Acquisition Program: SMCM UUV LRIP: SMCM UUV LRIP	2	2015	2	2016
SMCM UUV Acquisition Program: SMCM UUV Full Rate Production Decision: SMCM UUV Full Rate Production Decision	2	2016	2	2016
SMCM UUV Acquisition Program: SMCM UUV Full Rate Production: SMCM UUV Full Rate Production	3	2016	4	2016
SMCM UUV Acquisition Program: P3I: P3I	1	2015	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4025: <i>Expendable Mine Neutralization System</i>	1.245	4.200	-	-	-	-	-	-	-	0.000	5.445
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

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. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Hardware/Software Development</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continue 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. Provide test articles and technical support throughout EMNS development.</p>	0.407 0	-	-	-	-
<p>Title: Engineering Development</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Develop logistics products, including training materials and interactive technical manual. Provide Engineering support, including review for product development and ship integration.</p> <p>FY 2011 Plans: Develop logistics products, including training materials and interactive technical manuals. Provide engineering support, including review for product developments and ship integration.</p>	0.400 0	1.973 0	-	-	-
<p>Title: Test Events</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: EMNS Contractor Testing. Complete CT</p> <p>FY 2011 Plans:</p>	0.262 0	1.832 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
EMNS developmental testing including environmental and shock testing, and safety testing. Develop test and evaluation master plan (TEMP) and test reports. Conduct DT.					
Title: Management	0.176	0.395	-	-	-
Articles:	0	0			
FY 2010 Accomplishments: Provide program management support and travel for EMNS.					
FY 2011 Plans: Provide program management support and travel for EMNS.					
Accomplishments/Planned Programs Subtotals	1.245	4.200	-	-	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2622: <i>MINESWEEPING SYS REPLACEMENT, LV076 (EMNS)</i>	0.000	12.432	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.432
• WPN/4225: <i>AIRBORNE MCM, am080 (EMNS)</i>	0.000	4.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.071

D. Acquisition Strategy
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 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.

E. Performance Metrics
Successfully complete DT FY11 and receive MS C approval in FY12.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop Technical and Aquisition Documentation	WR	NSWC, PC:Panama City, FL	2.056	-		-		-		-	0.000	2.056	
Hardware/Software Development	C/CPIF	Lockheed Martin:Syracuse, NY	10.185	-		-		-		-	0.000	10.185	
Common Neutralizer Development	C/CPIF	Raytheon:Portsmouth, RI	2.431	-		-		-		-	0.000	2.431	
Deep Water Neutralizer Development	WR	NSWC, PC:Panama City, FL	-	-		-		-		-	0.300	0.300	
Deep Water Neutralizer Development	C/CPIF	BAE Systems:UK	-	-		-		-		-	3.000	3.000	
Subtotal			14.672	-		-		-		-	3.300	17.972	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop Logistics Products	C/CPIF	Lockheed Martin:Syracuse, NY	2.641	0.437	Nov 2010	-		-		-	0.000	3.078	
Develop Logistics Products	WR	NSWC:Panama City, FL	0.966	0.236	Nov 2010	-		-		-	0.000	1.202	
Engineering Support	C/CPIF	Lockheed Martin:Syracuse, NY	2.674	0.548	Nov 2010	-		-		-	0.000	3.222	
Engineering Support	C/CPIF	NSWC:Panama City, FL	7.456	0.752	Nov 2010	-		-		-	0.000	8.208	
Deep Water Neutralizr ILS	C/CPIF	BAE Systems:UK	-	-		-		-		-	0.252	0.252	
Deep Water Neutralizr ILS	C/FP	NSWC, PC:Panama City, FL	-	-		-		-		-	0.186	0.186	
Deep Water Neutralizer Engineering	C/CPIF	BAE Systems:UK	-	-		-		-		-	2.200	2.200	
Deep Water Neutralizer Engineering	WR	NSWC, PC:Panama City, FL	-	-		-		-		-	0.860	0.860	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			13.737	1.973		-		-		-	3.498	19.208	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop TEMP	WR	NSWC, PC:Panama City, FL	0.100	-		-		-		-	0.000	0.100	
CT/DT	C/CPIF	Lockheed Martin:Syracuse, NY	1.272	0.500	Jan 2011	-		-		-	0.000	1.772	
CT/DT	WR	NSWC, PC:Panama City, FL	1.272	1.332	Jan 2011	-		-		-	0.000	2.604	
Operational Test & Evaluation	WR	COTF:Norfolk, VA	-	-		-		-		-	0.000	0.000	
Common Neutralizer Testing	C/CPIF	Raytheon:Portsmouth, RI	-	-		-		-		-	0.000	0.000	
Common Neutralizer Test Sets	C/CPIF	Raytheon:Portsmouth, RI	-	-		-		-		-	0.000	0.000	
Deep Water Neutralizer T&E	C/CPIF	BAE System:UK	-	-		-		-		-	0.995	0.995	
Deep Water Neutralizer T&E	WR	NSWC, PC:Panama City, FL	-	-		-		-		-	2.295	2.295	
Subtotal			2.644	1.832		-		-		-	3.290	7.766	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	CACI:Arlington, VA	1.316	0.355	Nov 2010	-		-		-	0.000	1.671	
Travel	WR	NAVSEA:Washington, DC	0.250	0.040	Nov 2010	-		-		-	0.000	0.290	
Subtotal			1.566	0.395		-		-		-	0.000	1.961	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>	PROJECT 4025: <i>Expendable Mine Neutralization System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
EMNS				
Acquisition Milestones: Milestones: Milestone C	1	2012	1	2012
System Development: Integration Development: Integration Development	1	2010	4	2011
Test & Evaluation: Test Events: Contractor Testing CT	2	2010	2	2010
Test & Evaluation: Test Events: Developmental Testing DT	2	2011	2	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603502N: <i>Surface & Shallow Water MCM</i>				PROJECT 9999: <i>Congressional Adds</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	15.934	-	-	-	-	-	-	-	-	0.000	15.934
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional interest

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
<i>Congressional Add:</i> RMS Prog - Cong	7.967	-
<i>FY 2010 Accomplishments:</i> Congressional Add to continue development of the Remote Minehunting System (RMS) during the RMS reliability growth program.		
<i>Congressional Add:</i> Persistent Autonomous Maritime Surveillance	4.979	-
<i>FY 2010 Accomplishments:</i> Congressional Add to develop prototype for a persistent maritime surveillance system, and demonstrate technology feasibility for fleet applications.		
<i>Congressional Add:</i> Mine Hunting Sonar Prog - Cong	2.988	-
<i>FY 2010 Accomplishments:</i> 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.		
Congressional Adds Subtotals	15.934	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Congressional add

E. Performance Metrics

Congressional add

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