

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	1,588.067	150.540	86.333	118.588	-	118.588	134.937	126.400	165.073	198.818	Continuing	Continuing
0260: Remote Minehunting Systems	490.384	33.799	-	-	-	-	-	-	-	-	-	524.183
0530: Mine Hunt Systems	270.881	-	-	9.536	-	9.536	9.851	4.109	4.261	4.351	Continuing	Continuing
1233: Surface MCM Mid-life Upgrade	177.187	33.369	12.584	7.861	-	7.861	4.411	1.956	1.902	1.032	Continuing	Continuing
1234: Unmanned Surface Vehicle (USV)	0.000	-	23.974	34.072	-	34.072	10.826	1.695	4.162	6.372	Continuing	Continuing
1235: Mine Warfare Planning and Analysis	0.000	-	-	9.064	-	9.064	9.267	7.513	6.823	6.964	Continuing	Continuing
2094.: Unmanned Underwater Vehicle	32.562	19.637	13.674	25.065	-	25.065	73.986	89.327	126.324	154.719	Continuing	Continuing
2131: Assault Breaching System	528.358	49.432	17.908	15.598	-	15.598	21.400	16.424	16.007	17.354	Continuing	Continuing
3123: SMCM UUV	88.695	14.303	18.193	17.392	-	17.392	5.196	5.376	5.594	8.026	Continuing	Continuing
Program MDAP/MAIS Code: Project MDAP/MAIS Code(s): 286												
A. Mission Description and Budget Item Justification This program element provides resources for development of mine countermeasure systems to provide minehunting, minesweeping, and neutralization to counter known and projected mine threats. The mine countermeasures systems provide mobile, quick reaction forces capable of land or sea-based minehunting and minesweeping operations worldwide. Resources are for developing and deploying advanced mine-hunting and minesweeping systems and the intelligence and oceanographic capabilities that will enable mine warfare superiority. Tactics and techniques used vary across a diversity of environments and a diversity of threats, including both asymmetric and emerging. Resources provide for systems and support of mine warfare systems, maritime systems, and expeditionary systems to allow for continuous operations of the Navy's warships and support vessels, other military vessels, and commercial vessels. Core capabilities include forward presence, deterrence, sea control, power projection, maritime security, humanitarian assistance and disaster response to maintain freedom of the seas. Increased capability includes conducting minefield reconnaissance (mine density and location) at high area search rates, improving detection capability, decreasing sensor false alarm rates, reducing or eliminating post-mission analysis detect, classify, identify, decide time, improving neutralization time, improving network communications, automatic target recognition, and achieving in-stride detect-to-engage capability. Concept of operations includes development of cooperative, unmanned, modular systems; the establishment of a capable networked command and control systems; and standing up an accurate and interactive environmental system with the ability to form and disseminate a												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM			
Common Environmental Picture. Efforts benefit the MCM force by transforming the Navy from the platform-centered legacy set of systems to a capability-centered force that is distributed, networked, and able to provide unique maritime influence and access across the entire maritime domain.					
The Surface Mine Countermeasures (SMCM) programs are platform independent and will provide detection, classification, localization, identification, neutralization, and influence clearance capabilities. Programs develop: (1) remote minehunting capability for surface platforms; (2) the integration and improvement of new and existing systems (3) support for systems which detect, localize, classify, identify, and neutralize all mine types across Mine Countermeasure (MCM) Avenger Class and other platforms; (4) systems for neutralizing mines and light obstacles through the entire water column to include shallow water, very shallow water, surf zones, and beach landing craft zones in support of operations; (5) the integration of Unmanned Undersea Vehicles (UUVs) to meet Undersea Surveillance capabilities as well as other prioritized and enduring capabilities, requirements and gaps and (6) integrate hardware for experimental testing related to surface ship, aircraft, and other cross platform applications.					
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	160.040	100.349	75.597	-	75.597
Current President's Budget	150.540	86.333	118.588	-	118.588
Total Adjustments	-9.500	-14.016	42.991	-	42.991
• Congressional General Reductions	-	-0.025			
• Congressional Directed Reductions	-	-13.991			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.471	-			
• SBIR/STTR Transfer	-5.029	-			
• Program Adjustments	-	-	36.285	-	36.285
• Rate/Misc Adjustments	-	-	6.706	-	6.706
Change Summary Explanation					
Program Adjustments:					
FY14 -\$9,500K Total adjustments; Reprogramming CMS -\$6,600K, RMS +\$2,879K, Stalker -\$750K; SBIR -\$5,029K.					
FY15 -\$14.016K Total adjustments: Congressional Reductions SSQ-94 Trainer -\$1,500K, USV Development -\$3,600K, USV Support -\$1,000K, USV Flight 2 - \$7,891K, FFRDC Reduction -25K.					
FY16 \$42,991K Total adjustments; +\$7,285K Unmanned Surface Vehicle, +\$10,000K LDUUV, +\$9,571K AN/AQS-20 Realigned from PE 0604373N, -\$1,000K LDUUV, \$20,000K USV Speed to Fleet and -\$2,865K Misc Adjustments.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015			
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 0260 / Remote Minehunting Systems			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0260: Remote Minehunting Systems	490.384	33.799	-	-	-	-	-	-	-	-	-	524.183
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 286												
A. Mission Description and Budget Item Justification												
The AN/WLD-1(V)2 Remote Minehunting System (RMS) is a mine reconnaissance system designed for the detection, classification, identification, and localization of bottom and moored mines in shallow and deep water. The RMS will provide the Navy the capability to keep ships and sailors out of the minefield. The RMS is deployed from the Littoral Combat Ship (LCS) as part of the ships' Mine Countermeasure (MCM) Mission Package (MP). The RMS is a fully integrated system consisting of a semi-submersible Remote Multi-Mission Vehicle (RMMV) towing a variable depth sensor, the AN/AQS-20A. This budget line supports the RMMV. The RMMV is a high-endurance, semi-autonomous, low-observable, unmanned, diesel-powered vehicle, operated and maintained from the LCS. Line-of-sight (LOS) and over-the-horizon (OTH) data links provide real time vehicle command and control and mine reconnaissance sensor data transmission to/from LCS.												
The first RMMV Low Rate Initial Production (LRIP) units (LRIP 1) were used during the RMMV Reliability Growth Program (RGP) v4.2 configuration and are being upgraded to the version 6.0 (v6.0) configuration to support LCS integration.												
In the first quarter of FY14, the improved performance was validated during RMMV Developmental Testing (DT-IIG). A Defense Acquisition Board (DAB) was held in July FY14 for a production decision. The DAB deferred production decision until receipt of proposals (2Q FY15) for the RMMV Competitive contract to procure the next LRIPs.												
This is not a new start. Acquisition Category (ACAT) 1D Transparency requirement realigned program funding to Project Element 0604122N/Project Unit 0260 beginning in FY15.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development:								17.474	-	-	-	-
								Articles: -	-	-	-	-
FY 2014 Accomplishments:												
- Completed grooming of RMMVs to support v4.2 RMMV DT-IIG.												
- Corrected technical issues discovered during v4.2 RMMV DT-IIG.												
- Completed RMMV v4.2 Technical Data Package (TDP).												
- Implemented Operational Availability (Ao) hardware/software improvements.												

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 0260 / Remote Minehunting Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Support LCS MCM MP and RMMV integration efforts (RMMV v6.0 Preliminary Engineering Change Proposals (PECPs)) on (4) RMMVs. The PECP improvements include structural upgrades to support safe launch and recovery on the LCS, integration of the Multi Vehicle Communication System (MVCS), AN/AQS-20A Sonar Pre-Planned Product Improvement (P3I), and fleet suitability upgrades. FY 2015 Plans: - Realigned to PE 0604122N FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Support: Articles: FY 2014 Accomplishments: - Provided engineering, logistics, and programmatic support of RMMV DT-IIG. - Completed RMMV v4.2 Physical Configuration Audit (PCA), Interactive Electronic Technical Manual (IETM), and TDP. - Prepared for Milestone (MS) C DAB and acquisition documentation. - Conducted a DAB IPR vice a MS C DAB. - Provided engineering, logistics, and programmatic support for LCS MCM MP Test events. - Provided on-site engineering support and production oversight at contractor facility. - Conducted RMMV Ready For Issue (RFI) Inspections. FY 2015 Plans: - Realigned to PE 0604122N FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A		6.664 -	- -	- -	- -	- -
Title: Test & Evaluation: Articles:		8.531 -	- -	- -	- -	- -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 0260 / Remote Minehunting Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: - Completed RMMV v4.2 DT-IIG. Achieved more than 385 hours of total system operating time during 18 off-shore operationally-representative mine-hunting missions. LCS MCM MP Detachment sailors executed all phases of the RMS mine-hunting mission, including mission planning, mission operations, and post-mission data analysis for the entire test period. - Supported integration and verification testing of RMMV v6.0 including with upgraded AN/AQS-20A Sonar P3I.						
FY 2015 Plans: Realigned to PE 0604122N						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: Management:		1.130	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: - Provided program management oversight in support of v4.2 RMMV DT-IIG. - Provided program management and oversight of RMMV v6.0. - Prepared acquisition documentation in support of the MS C DAB. - Prepared for development and release of the new start RMMV Competitive Low Rate Initial Production (LRIP 2)/Full Rate Production (FRP) contract. - Prepared for the award of the LRIP 1 RMMV Integration/Maintenance contract.						
FY 2015 Plans: - Realigned to PE 0604122N						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		33.799	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>				Project (Number/Name) 0260 / <i>Remote Minehunting Systems</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• 0604122N: <i>Remote Minehunting System</i>	-	21.110	20.089	-	20.089	28.018	8.219	9.951	8.632	-	96.019
Remarks											
D. Acquisition Strategy											
Completed all requirements set forth in Nunn-McCurdy Acquisition Decision Memorandum (ADM) in FY14. Conducted DAB IPR in 4th QTR FY14.											
E. Performance Metrics											
- Completed exit criteria set forth in Nunn-McCurdy ADM (FY14) - Completed RMS RGP DT (FY14) - Conducted DAB IPR (FY14)											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 0260 / Remote Minehunting Systems					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development & Integration 1	SS/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	132.439	6.738	Oct 2013	-		-		-		-	-	139.177	-
Hardware Development & Integration 2	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	95.993	-		-		-		-		-	-	95.993	-
Hardware Development & Integration	WR	NSWC, PC : Panama City, FL	11.770	-	Oct 2013	-		-		-		-	-	11.770	-
Systems Engineering 1	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	5.465	-		-		-		-		-	-	5.465	-
Systems Engineering 2	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	16.211	-		-		-		-		-	-	16.211	-
Systems Engineering 3	WR	NSWC, PC : Panama City, FL	5.294	-		-		-		-		-	-	5.294	-
Award Fees	SS/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	5.485	-		-		-		-		-	-	5.485	-
Hardware Deveopment & Integration	C/FFP	ARL/PSU : State College, PA	0.655	-		-		-		-		-	-	0.655	-
Hardware Development & Integration 3	SS/CPFF	LOCKHEED MARTIN : West Palm Beach, FL	0.000	10.736	Oct 2013	-		-		-		-	-	10.736	-
Subtotal			273.312	17.474		-		-		-		-	-	290.786	-
Remarks ARL/PSU - Applied Reseach Laboratory - Pennsylvania State University															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>						Project (Number/Name) 0260 / <i>Remote Minehunting Systems</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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 : West Palm Beach, FL	7.092	-		-		-		-		-	-	7.092	-
Software Development 2	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	6.961	-		-		-		-		-	-	6.961	-
Software Development 3	WR	NSWC, PC : West Palm Beach, FL	2.142	-		-		-		-		-	-	2.142	-
ILS 1	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	17.836	-		-		-		-		-	-	17.836	-
ILS 2	SS/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	2.000	-		-		-		-		-	-	2.000	-
Engineeing Support/ILS 3	WR	NSWC, PC : Panama City, FL	11.075	4.722	Oct 2013	-		-		-		-	-	15.797	-
ILS 4	WR	VARIOUS : Various	1.125	0.328	Jul 2014	-		-		-		-	-	1.453	-
Ship Integration 1	SS/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	1.258	-		-		-		-		-	-	1.258	-
Ship Integration 2	C/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	11.938	-		-		-		-		-	-	11.938	-
Ship Integration 3	Various	VARIOUS : Various	13.714	-		-		-		-		-	-	13.714	-
Engineering Support	WR	NSWC Corona : Corona, CA	0.110	-		-		-		-		-	-	0.110	-
Engineering Support	WR	NUWC, NPT : Newport, RI	2.695	0.512	Oct 2013	-		-		-		-	-	3.207	-
Engineering Support	WR	NUWC, KPT : Keyport, WA	1.062	0.629	Oct 2013	-		-		-		-	-	1.691	-
ILS Support	WR	NAWCAD : Patuxent, MD	0.312	-		-		-		-		-	-	0.312	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 0260 / Remote Minehunting Systems			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	WR	NSWC Carderock : Carderock, MD	0.755	0.250	Oct 2013	-		-		-		-	-	1.005	-
Sandia labs - Reliability Engineering	WR	NSWC, PC : Panama City, FL	1.649	-	Oct 2013	-		-		-		-	-	1.649	-
Enginerring Support	WR	PORTSMOUTH NSY : Portsmouth, NH	0.263	0.223	Oct 2013	-		-		-		-	-	0.486	-
Subtotal			81.987	6.664		-		-		-		-	-	88.651	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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 : West Palm Beach, FL	18.470	-		-		-		-		-	-	18.470	-
Developmental Test & Evaluation	SS/CPIF	LOCKHEED MARTIN : West Palm Beach, FL	56.996	3.123	Oct 2013	-		-		-		-	-	60.119	-
Developmental Test & Evaluation	WR	NSWC, PC : Panama City, FL	15.338	3.736	Oct 2013	-		-		-		-	-	19.074	-
Developmental Test & Evaluation	WR	COTF : Norfolk, VA	0.861	0.488	Oct 2013	-		-		-		-	-	1.349	-
Developmental Test & Evaluation	WR	VARIOUS : Various	5.298	-		-		-		-		-	-	5.298	-
Developmental Test & Evaluation	WR	NSWC/Carderock : Carderock, MD	0.870	0.744	Oct 2013	-		-		-		-	-	1.614	-
Developmental Test & Evaluation	WR	LCSSRON : San Diego, CA	0.000	0.440	Oct 2013	-		-		-		-	-	0.440	-
Subtotal			97.833	8.531		-		-		-		-	-	106.364	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 0260 / Remote Minehunting Systems			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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 : West Palm Beach, FL	6.569	-		-		-		-		-	-	6.569	-
Government Engineering Support1	WR	NSWC, PC : Panama City, FL	22.996	-		-		-		-		-	-	22.996	-
Government Engineering Support2	WR	NSWC, PC : Panama City, FL	0.237	-		-		-		-		-	-	0.237	-
Program Management Support	C/CPFF	CACI : Washington, DC	6.719	1.085	Oct 2013	-		-		-		-	-	7.804	-
Travel	WR	NAVSEA : WNY, DC	0.731	0.045	Oct 2013	-		-		-		-	-	0.776	-
Subtotal			37.252	1.130		-		-		-		-	-	38.382	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			490.384	33.799		-		-		-		-	-	524.183	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy														Date: February 2015																							
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM								Project (Number/Name) 0260 / Remote Minehunting Systems																			
Proj 0260										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestones																																					
Product Development																																					
										RMS/LCS Integration																											
RMS Test & Evaluation Milestones																																					
										RMMV Reliability Growth Program/LCS Integration																											
RMS Contract Milestones																																					
2016OSD - 0603502N - 0260																																					

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 0260 / <i>Remote Minehunting Systems</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 0260</i>				
Milestones: Defense Acquisition Board	4	2014	4	2014
Product Development: RMS/LCS Integration	1	2014	4	2014
RMS Test & Evaluation Milestones: RMMV Reliability Growth Program/LCS Integration: RMMV Reliability Growth Program	1	2014	4	2014
RMS Test & Evaluation Milestones: RMMV Reliability Growth Program/LCS Integration: RMS DT-IIG	1	2014	1	2014
RMS Test & Evaluation Milestones: RMMV Reliability Growth Program/LCS Integration: RMS v6.0 Contractor Testing (CT)	4	2014	4	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 0530 / Mine Hunt Systems			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0530: Mine Hunt Systems	270.881	-	-	9.536	-	9.536	9.851	4.109	4.261	4.351	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project contains resources for systems, subsystems, and sensors integrated for use with the Remote Minehunting System (RMS) Remote Multi-Mission Vehicle (RMMV) for mine detection, classification, localization, identification, neutralization, and influence clearance capabilities. Research, development, test, and evaluation efforts are for increasing capability by decreasing time required to conduct Mine Countermeasures (MCM) operations, ensuring low risk to naval and commercial vessels, and removing the man from the minefield. Increased capability includes conducting minefield reconnaissance (mine density and location) at high area search rates, improving detection capability, decreasing sensor false alarm rates, and reducing post-mission analysis for detection, classification, identification, and neutralization.

The AN/AQS-20A is a mine hunting and identification system with acoustic and optic sensors housed in an underwater towed body. The acoustic sensors are designated for the detection, classification and localization of bottom, close-tethered, and volume targets in a single pass. The Electro-Optic Identification Device (EOID) replaces the Volume Search Sonar (VSS) for identification of bottom targets. The system will be deployed from the Littoral Combat Ship (LCS) as part of the MCM Mission Package. The RMS Remote Multi-Mission Vehicle (RMMV) tows the AN/AQS-20A.

In FY16, the AN/AQS-20A Block 2 P3I program will initiate Synthetic Aperture Sonar Acoustic (SAS) Identification (ID) development. The Block 2 P3I program begins in FY16 and continues beyond FY20. The AN/AQS-20A program will also develop a Waveform Generator improvement to support SAS capability at maximum RMMV speeds. Development and Testing of IOT&E deficiency corrective actions will also occur. Material Reliability, obsolescence, and performance Engineering Change Proposal (ECP) efforts will continue beyond FY20.

This is not a new start. Realigned program funding from Program Element 0604373N/Project Unit 0529 beginning in FY16.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: AN/AQS-20A Product Development:	-	-	5.550	-	5.550
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Cited in Program Element 0604373N.					
FY 2015 Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 0530 / Mine Hunt Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Cited in Program Element 0604373N.						
FY 2016 Base Plans: - Develop replacement Wave Form Generator ECP to resolve obsolescence and support Synthetic Aperture Sonar (SAS) capability at maximum RMMV mine hunting search speeds. - Continue SAS Acoustic Identification development. - Develop corrective actions for deficiencies identified during IOT&E.						
FY 2016 OCO Plans: N/A						
Title: AN/AQS-20A Support:		-	-	2.071	-	2.071
Articles:		-	-	-	-	-
FY 2014 Accomplishments: -Cited in Program Element 0604373N.						
FY 2015 Plans: -Cited in Program Element 0604373N.						
FY 2016 Base Plans: - Provide ongoing technical engineering support to AN/AQS-20A. - Complete updates to logistics products based on the results of LCS MCM MP IOT&E. - Conduct repairs to AN/AQS-20A following IOT&E activities.						
FY 2016 OCO Plans: N/A						
Title: AN/AQS-20A Test and Evaluation		-	-	0.615	-	0.615
Articles:		-	-	-	-	-
FY 2014 Accomplishments: -Cited in Program Element 0604373N.						
FY 2015 Plans: -Cited in Program Element 0604373N.						
FY 2016 Base Plans:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy								Date: February 2015			
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>				Project (Number/Name) 0530 / <i>Mine Hunt Systems</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total			
- Verify correction of deficiencies identified during IOT&E.											
FY 2016 OCO Plans: N/A											
Title: AN/AQS-20A Management Services				Articles:	-	-	1.300	-	1.300		
				-	-	-	-	-	-		
FY 2014 Accomplishments: -Cited in Program Element 0604373N.											
FY 2015 Plans: -Cited in Program Element 0604373N.											
FY 2016 Base Plans: - Provide planning and management for the AN/AQS-20A program. - Update acquisition documentation in support of FRP Decision Review and Initial Operational Capability. - Conduct FRP Decision Review. - Provide Program Office travel support.											
FY 2016 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				-	-	9.536	-	9.536			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 1601: <i>LCS MCM Mission Modules (AN/AQS-20A)</i>	16.196	8.244	32.434	-	32.434	39.200	29.900	30.800	16.200	Continuing	Continuing
• RDTE&E 0604373N: <i>Airborne Mine Countermeasures (AMCM)</i>	40.862	13.319	-	-	-	-	-	-	-	-	325.062
Remarks											
D. Acquisition Strategy AN/AQS-20A LRIP procurement continues following Block 2 competitive contract award in FY14. FRPDR will occur in second quarter FY16. Procure P3I kits to upgrade all Block 1 units to meet Block 2 capability.											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 0530 / <i>Mine Hunt Systems</i>
AN/AQS-24C contract award will occur 3Q FY14 and integrate and test volume search upgrade kits. <u>E. Performance Metrics</u> AN/AQS-20A Block 2 competitive award in FY14. AN/AQS-20A - Successfully complete Block 2 IOT&E in FY15.		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 0530 / Mine Hunt Systems					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20A Hardware/ Software Development Q-20 on the H-53	SS/CPIF	Raytheon : Portsmouth, RI	31.120	-		-		-		-		-	-	31.120	-
AN/AQS-20A Hardware/ Software Development Q-20A on the H-60	C/CPFF	Raytheon : Portsmouth, RI	60.150	-		-		-		-		-	-	60.150	-
AN/AQS-20A Hardware/ Software Development	WR	NSWC, PC : Panama City FL	14.578	-		-		-		-		-	-	14.578	-
AN/AQS-20A Hardware/ Software Development	C/FP	Northrop Grumman : Melbourne, FL	4.572	-		-		-		-		-	-	4.572	-
AN/AQS-20A P3I	C/CPFF	Raytheon : Portsmouth, RI	16.441	-		-		4.315	Nov 2015	-		4.315	Continuing	Continuing	Continuing
AN/AQS-20A P3I	C/CPFF	ARL/UT : Austin, TX	7.767	-		-		0.400	Dec 2015	-		0.400	Continuing	Continuing	Continuing
AN/AQS-20A P3I	WR	NSWC, PC : Panama City FL	3.732	-		-		0.800	Oct 2015	-		0.800	-	4.532	-
AN/AQS-20A Materiel Reliability ECP Development	C/CPFF	Raytheon : Portsmouth, RI	0.000	-		-		-		-		-	-	-	-
AN/AQS-20A P3I	WR	Naval Research Lab : Stennis Space Center, MS	0.225	-		-		-		-		-	-	0.225	-
Subtotal			138.585	-		-		5.515		-		5.515	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20A Engineering Services	WR	NSWC, PC : Panama City, FL	31.570	-		-		0.406	Oct 2015	-		0.406	-	31.976	-
AN/AQS-20A Engineering Services	C/CPFF	Raytheon : Portsmouth, RI	3.686	-		-		1.500	Oct 2015	-		1.500	-	5.186	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 0530 / Mine Hunt Systems					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20A Engineering Services	Various	Various : Various	54.018	-		-		-		-		-	-	54.018	-
AN/AQS-20A Engineering Services 2	SS/CPIF	Raytheon : Portsmouth, RI	3.464	-		-		-		-		-	-	3.464	-
AN/AQS-20A ILS Function	WR	NSWC, PC : Panama City FL	6.368	-		-		0.200	Oct 2015	-		0.200	-	6.568	-
AN/AQS-20A ILS Function	SS/CPIF	Raytheon : Portsmouth, RI	1.546	-		-		-		-		-	-	1.546	-
AN/AQS-20A ILS Function	Various	Various : Various	0.981	-		-		-		-		-	-	0.981	-
AN/AQS-20A Engineering Services	WR	NSWC/CD : Carderock, MD	0.500	-		-		-		-		-	-	0.500	-
Subtotal			102.133	-		-		2.106		-		2.106	-	104.239	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20A T&E Functions	WR	COTF : Norfolk, VA	0.000	-		-		-		-		-	-	-	-
AN/AQS-20A T&E Functions	WR	NSWC, PC : Panama City FL	18.115	-		-		0.615	Oct 2015	-		0.615	-	18.730	-
AN/AQS-20A T&E Functions	C/CPFF	Raytheon : Portsmouth, RI	4.134	-		-		-		-		-	-	4.134	-
AN/AQS-20A T&E Functions	Various	Various : Various	1.583	-		-		-		-		-	-	1.583	-
AN/AQS-20A T&E Functions	C/CPFF	ARL/UT : Austin, TX	0.000	-		-		-		-		-	-	-	-
Subtotal			23.832	-		-		0.615		-		0.615	-	24.447	-
Remarks COFT - Naval Command Operational Test and Evaluation Force															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 0530 / Mine Hunt Systems			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20A Management Services	TBD	Various : Various	5.732	-		-		1.260	Dec 2015	-		1.260	-	6.992	-
AN/AQS-20A Travel	TBD	Various : Various	0.587	-		-		0.040	Jan 2016	-		0.040	-	0.627	-
AN/AQS-20A Acquisition Workforce Fund	Various	Various : Various	0.012	-		-		-		-		-	-	0.012	-
Need Item Text	C/BA	Not Specified : Not Specified	0.000	-		-		-		-		-	-	-	-
Subtotal			6.331	-		-		1.300		-		1.300	-	7.631	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			270.881	-		-		9.536		-		9.536	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name)

PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)

0530 / Mine Hunt Systems

Proj 0530	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
										IOC																		
										FRP Decision Block 2																		
AN/AQS-20A Development Phase																												
AN/AQS-20A Production Milestones																												
AN/AQS-20A Full Rate Production (FRP)										Block 2 Production (6 Units)			Block 2 Production (8 Units)				Block 2 Production (6 Units)				Block 2 Production (6 Units)							
AN/AQS-20A System Deliveries													Block 2 LRIPs (3 Units)			Block 2 LRIP (1 Unit)			Block 2 LRIPs (2 Units)									

2016PB - 0603502N - 0530

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 0530 / <i>Mine Hunt Systems</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 0530</i>				
Initial Operational Capability (IOC)	2	2016	2	2016
AN/AQS-20A Full Rate Production (FRP) Decision Block 2	2	2016	2	2016
AN/AQS-20A Development Phase: AN/AQS-20A Block 2 P3I	1	2016	4	2020
AN/AQS-20A Development Phase: AN/AQS-20A Materiel Reliability, Obsolesence, and Performance ECP Development (Block 1 & 2)	1	2016	4	2020
AN/AQS-20A Production Milestones: AN/AQS-20A Full Rate Production (FRP): AN/AQS-20A Block 2 Production Basic Award (6 Units)	2	2016	2	2016
AN/AQS-20A Production Milestones: AN/AQS-20A Full Rate Production (FRP): AN/AQS-20A Block 2 Production Option 1 Award (8 Units)	2	2017	2	2017
AN/AQS-20A Production Milestones: AN/AQS-20A Full Rate Production (FRP): AN/AQS-20A Block 2 Production Option 2 Award (6 Units)	2	2018	2	2018
AN/AQS-20A Production Milestones: AN/AQS-20A Full Rate Production (FRP): AN/AQS-20A Block 2 Production Option 3 Award (6 Units)	2	2019	2	2019
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 LRIP Basic Award Systems (3 Units)	1	2017	1	2017
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 LRIP Basic Award Systems (2 Units)	3	2017	3	2017
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 LRIP Option 1 Award System (1 Unit)	2	2017	2	2017
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 Production Basic Award Systems (6 Units)	2	2018	4	2018
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 Production Option 1 Award Systems (8 Units)	2	2019	1	2020

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 0530 / Mine Hunt Systems	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
AN/AQS-20A System Deliveries: AN/AQS-20A Block 2 Production Option 2 Award Systems (6 Units)		2	2020	3	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1233: Surface MCM Mid-life Upgrade	177.187	33.369	12.584	7.861	-	7.861	4.411	1.956	1.902	1.032	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Note												
UISS and Multi-Function USV funding moved to PE 0603502N Proj:1234 Unmanned Surface Vehicle (USV)												
A. Mission Description and Budget Item Justification												
This project provides resources for development, improvement and integration of MCM systems. A description of the major planned programs include the following:												
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) The Unmanned Influence Sweep System (UISS) utilizes an Unmanned Surface Vehicle (USV) integrated with an Unmanned Surface Sweep System (US3), a magnetic/acoustic sweep system developed to sweep acoustic/magnetic influence mines, which can be deployed from the Littoral Combat Ship (LCS) or a ship of opportunity; 5) The Multi-Function USV replaces the sweep system with a minehunting sensor. The capability leverages off a common USV to conduct minehunting missions. 6) AN/SLQ-60 Mine Neutralization System (MNS) Seafox on the MCM Class ships. MNS is the replacement to the existing AN/SLQ-48 Mine Neutralization System. 7) SSQ-94 MCM Trainer upgrade will incorporate the AN/SQQ-32 (V)8 sonar, SSN2(V)5 PINS and Mine Neutralization System Team Trainer.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: HFWB/PRODUCT DEVELOPMENT: Articles: FY 2014 Accomplishments: Continued systems engineering, requirements analysis, design and development for AN/SQQ-32(V)4 HFWB P3I thru the sensor effort. FY 2015 Plans: Continue systems engineering, requirements analysis, design and development for AN/SQQ-32(V)4 HFWB P3I thru the sensor effort. FY 2016 Base Plans:								1.133	0.856	0.890	-	0.890
								-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue systems engineering, requirements analysis, design and development for AN/SQQ-32(V)4 HFWB P3I thru the sensor effort. FY 2016 OCO Plans: N/A						
Title: HFWB/SUPPORT: Articles:		0.394 -	0.394 -	0.155 -	- -	0.155 -
FY 2014 Accomplishments: Continued software requirements, configuration, and software integration for AN/SQQ-32(V)4 HFWB P3I through the sensor. FY 2015 Plans: Continue software requirements, configuration, and software integration for AN/SQQ-32(V)4 HFWB P3I through the sensor. FY 2016 Base Plans: Continue software requirements, configuration, and software integration for AN/SQQ-32(V)4 HFWB P3I through the sensor. FY 2016 OCO Plans: N/A						
Title: HFWB/TEST AND EVALUATION: Articles:		0.310 -	0.303 -	0.650 -	- -	0.650 -
FY 2014 Accomplishments: Continued to perform Lab and At Sea testing for AN/SQQ-32(V)4 HFWB P3I effort. FY 2015 Plans: Continue to perform Lab and At Sea testing for AN/SQQ-32(V)4 HFWB P3I effort. FY 2016 Base Plans: Continue to perform Lab and At Sea testing for AN/SQQ-32(V)4 HFWB P3I effort and thru the senor testing. FY 2016 OCO Plans: N/A						
Title: MEDAL/PRODUCT DEVELOPMENT:		4.333	3.512	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Completed development of MEDAL EA Iteration 7. Conduct Contractor and Government testing for MEDAL EA v1.						
FY 2015 Plans: Conduct Test & Evaluation of MINEnet Tactical (MEDAL EA). Integration activities with LCS Mission Package. Develop Information Assurance documentation for Authority to Operate on Navy networks. Conduct series of Development tests (DTs). Continue planning for the development of MEDAL EA Increment 2. Begin development of MEDAL EA course curriculum. Conduct series of regression tests.						
FY 2016 Base Plans: Moved to Project Unit (PU) 1235						
FY 2016 OCO Plans: N/A						
Title: MEDAL/SUPPORT:		0.550	0.536	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Oversaw technical integration of developed algorithms and models that have demonstrated their effectiveness with respect to their objectives. Supported efforts to include communication with activities such as applied labs, government activities, and designated contractors. Assisted in providing the speed, agility, adaptability, and flexibility required for modern MCM operations. Completed Fielding Plan for MEDAL EA; submitted logistics and DOD Information Assurance (IA) Certification and Accreditation Process (DIACAP) packages.						
FY 2015 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. Achieve IOC and begin fielding to achieve FOC. Continue introduction of CES capability and Planning on Risk (PoR) functionality via a limited fielding to Fleet Users						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
including Mine Countermeasures Squadrons (MCMRONs) and Naval Mine and Anti Submarine Warfare Command (NMAWC). Provide in-service support to MEDAL EA IOC units. FY 2016 Base Plans: Moved to Project Unit (PU) 1235 FY 2016 OCO Plans: N/A						
Title: MEDAL/TEST AND EVALUATION: Articles: FY 2014 Accomplishments: Incorporated lessons learned from MINENet Tactical CT. FY 2015 Plans: Continue System Integration testing activities with multiple platforms. Continue planning for subsequent OA events. Deliver to Fleet in accordance with the MEDAL EA Fielding Plan. Conduct system Integration testing activities with LCS, CANES and ISNS. FY 2016 Base Plans: Moved to Project Unit (PU) 1235 FY 2016 OCO Plans: N/A		1.960 -	1.735 -	- -	- -	- -
Title: MEDAL/MANAGEMENT: Articles: FY 2014 Accomplishments: Provided program management support and travel for MEDAL program. Provided overall technical guidance and leadership for the program. Oversaw financial and logistics efforts and coordinated 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		0.759 -	0.768 -	- -	- -	- -

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
relate to MEDAL and MIW Mission Planning, Evaluation, and C4ISR. Other PM tasking to include briefings, demonstrations, and project planning as required. FY 2015 Plans: 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. FY 2016 Base Plans: Moved to Project Unit (PU) 1235 FY 2016 OCO Plans: N/A						
Title: MNS Replacement Articles:		1.815 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed SMCM ship system engineering and testing for the MCM Ship Mine Neutralization System (Seafox)Replacement program. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: SSQ-94 MCM Trainer Development Articles:		4.100 -	4.480 -	6.166 -	- -	6.166 -
FY 2014 Accomplishments:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
SSQ-94 Mine Warfare Countermeasures Simulator; developed the hardware and software upgrades to the combat system team/individual training capabilities on the MCM Class Ship FY 2015 Plans: SSQ-94 Mine Warfare Countermeasures Simulator; continue development of hardware and software upgrades to the combat system team/individual training capabilities on the MCM Class Ship FY 2016 Base Plans: SSQ-94 Mine Warfare Countermeasures Simulator; continue development of hardware and software upgrades to the combat system team/individual training capabilities on the MCM Class Ship FY 2016 OCO Plans: N/A						
Title: UISS /PRODUCT DEVELOPMENT: Articles:		6.000 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed MS B. Began Engineering and Manufacturing Design (E&MD) phase. Award Engineering Development Model (EDM) contract. Design and build EDM. Develop software and hardware interfaces. FY 2015 Plans: Moved to Project Unit 1234 FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: UISS / SUPPORT: Articles:		2.250 -	- -	- -	- -	- -
FY 2014 Accomplishments: Completed Milestone B documentation. Commenced Engineering and ILS support for E&MD phase efforts. FY 2015 Plans: Moved to Project Unit 1234. FY 2016 Base Plans:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
FY 2016 OCO Plans: N/A						
Title: UISS / TEST AND EVALUATION:		3.665	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Developed TEMP.						
FY 2015 Plans: Moved to Project Unit 1234						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: UISS / MANAGEMENT:		1.900	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Commence E&MD contract management. Commence program support for Milestone C documentation.						
FY 2015 Plans: Moved to Project Unit 1234.						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: USV / PRODUCT DEVELOPMENT		3.800	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total			
Developed hardware and software changes to tow minehunting sensor. Tested sonar performance when towed by RHIB in various sea states. FY 2015 Plans: Moved to Project Unit 1234. FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A											
Title: USV / SUPPORT Articles:				0.400 -	- -	- -	- -	- -			
FY 2014 Accomplishments: Engineering and Logistic support for hardware development. FY 2015 Plans: Moved to Project Unit 1234. FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				33.369	12.584	7.861	-	7.861			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2622: LV075/LV078/LV080	29.779	16.262	7.572	-	7.572	11.036	6.760	1.628	0.798	-	177.262
Remarks											
D. Acquisition Strategy HFWB - Naval Surface Warfare Center, Panama City (NSWC, PC) and ARL UT designed and developed the HFWB upgrade to the AN/SQQ-32.											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 1233 / <i>Surface MCM Mid-life Upgrade</i>
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 Naval Mine Warfare and Anti-Submarine Command (NMAWC). The fleet inputs are then consolidated by COMINELWARCOM 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. SSQ-94 MCM Trainer upgrade will incorporate the AN/SQQ-32 (V)8 sonar, SSN2(V)5 PINS and Mine Neutralization System Team Trainer. UISS (US3)- Requirements for Unmanned Influence Sweep System (UISS) are documented in the Unmanned Influence Sweep System (UISS) Capability Development Document (CDD). Two Engineering and Manufacturing Development (EMD) contracts will be awarded in FY14 with an option for Low Rate Initial Production (LRIP). The UISS program moved to Project Unit 1234 starting in FY15. <u>E. Performance Metrics</u> UISS - Successfully reach Milestone B in FY14; Award EDM contract.		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MNS Development	Various	TBD : TBD	20.640	1.815	Nov 2013	-		-		-		-	-	22.455	-
SSQ-94 Trainer	WR	NSWC, PC : TBD	0.000	4.100	Dec 2013	4.480	Nov 2014	6.166	Nov 2015	-		6.166	-	14.746	-
BSP: Develop Bottom Sediment Classifier	WR	NRL : WASHINGTON, DC	0.258	-		-		-		-		-	-	0.258	-
Systems Engineering and Integration	WR	NSWC, PC : PANAMA CITY, FL	0.306	-		-		-		-		-	-	0.306	-
System Development 1	WR	NSWC, PC : SAN DIEGO, CA	0.373	-		-		-		-		-	-	0.373	-
Systems Engineering 2	WR	NSWC, PC : PANAMA CITY, FL	2.915	-		-		-		-		-	-	2.915	-
Systems Engineering 3 MCM CES	WR	NSWC, PC : PANAMA CITY, FL	1.633	-		-		-		-		-	Continuing	Continuing	Continuing
HFWB: Primary Hardware Development 1	C/CPAF	NSWC, PC/ARL UT : FLORIDA/TEXAS	15.511	-		-		-		-		-	-	15.511	-
Primary Hardware Development 2	WR	ARL-UT : AUSTIN, TX	0.000	-		-		-		-		-	-	-	-
HFWB: Tow Cable Development	C/CPAF	NSWC, PC/ARL UT : FLORIDA/TEXAS	1.399	-		-		-		-		-	-	1.399	-
HFWB: Ship Integration	WR	NSWC, PC : PANAMA CITY, FL	1.697	-		-		-		-		-	-	1.697	-
HFWB: SYSTEM ENGINEER	C/CPAF	NSWC/ARL UT : FLORIDA/TEXAS	5.874	1.133	Nov 2013	0.856	Nov 2014	0.890	Nov 2015	-		0.890	-	8.753	-
Software Development MEDAL EA	C/CPFF	SAIC : McLean, VA	33.335	4.333	Nov 2013	3.512	Nov 2014	-		-		-	-	41.180	-
UISS: Product Development 1	C/CPIF	ITT : Panama City, FL	5.198	-		-		-		-		-	-	5.198	-
UISS: Product Development 2	WR	NSWC, PC : Panama City, FL	4.323	-		-		-		-		-	-	4.323	-
UISS: Product Development 3	C/CPIF	Various : Various	2.781	-		-		-		-		-	-	2.781	-
UISS: Product Development 4	C/CPIF	TBD : TBD	8.930	6.000	Sep 2014	-		-		-		-	-	14.930	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Product Development 5	WR	NSWC, CD : Bethesda, MD	1.224	-		-		-		-		-	-	1.224	-
USV: Product Development	C/CPIF	TBD : TBD	0.000	3.800	Sep 2014	-		-		-		-	-	3.800	-
Subtotal			106.397	21.181		8.848		7.056		-		7.056	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	0.243	-		-		-		-		-	-	0.243	-
Software Development 1	C/CPFF	SAIC : McLean, VA	0.350	-		-		-		-		-	-	0.350	-
Software Development 2	C/CPFF	SAIC : McLean, Va	0.914	-		-		-		-		-	-	0.914	-
HFVB Software Development	WR	NSWC, PC/ARL-UT : FLORIDA/TEXAS	7.382	0.394	Nov 2013	0.394	Nov 2014	0.155	Nov 2015	-		0.155	-	8.325	-
HFVB Integrated Logistics Support	WR	NSWC, PC : PANAMA CITY, FL	2.765	-	Nov 2013	-	Nov 2014	-		-		-	-	2.765	-
Software Engineering 1 MCM CES	WR	NSWC, PC : PANAMA CITY, FL	1.517	-		-		-		-		-	-	1.517	-
Software Engineering 2 MEDAL	WR	NSWC, PC : PANAMA CITY, FL	1.472	0.550	Nov 2013	0.536	Nov 2014	-		-		-	-	2.558	-
UISS: Engineering 1	C/CPAF	ITT : Panama City, FL	3.018	-		-		-		-		-	-	3.018	-
UISS: Engineering 2	WR	NSWC, PC : Panama City, FL	5.451	1.050	Dec 2013	-		-		-		-	-	6.501	-
UISS: Engineering 3	WR	NSWC, CD : Bethesda, MD	1.500	1.100	Dec 2013	-		-		-		-	-	2.600	-
UISS: Integrated Logistics 1	C/CPAF	ITT : Panama City, FL	1.408	-		-		-		-		-	-	1.408	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Integrated Logistics 2	WR	NSWC, PC : Panama City, FL	5.738	-		-		-		-		-	-	5.738	-
UISS: Integrated Logistics 3	WR	NSWC, CD : Bethesda, MD	0.000	0.250	Dec 2013	-		-		-		-	-	0.250	-
USV : Engineering 1	WR	NSWC, CD : Bethesda, MD	0.000	0.250	Dec 2013	-		-		-		-	-	0.250	-
USV : Engineering 2	WR	NSWC, PC : Panama City, FL	0.000	-		-		-		-		-	-	-	-
USV : Integrated Logistics 1	WR	NSWC, CD : Bethesda, MD	0.000	-		-		-		-		-	-	-	-
Subtotal			31.758	3.594		0.930		0.155		-		0.155	-	36.437	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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 : McLean, VA	3.964	1.960	Nov 2013	1.735	Nov 2014	-		-		-	-	7.659	-
MCM CES Test and Evaluation 1	C/CPAF	VARIOUS : VARIOUS	1.782	-		-		-		-		-	-	1.782	-
HFWB: Developmental Test and Evaluation	WR	NSWC, PC/ARL-UT : FLORIDA/TEXAS	4.549	0.310	Nov 2013	0.303	Nov 2014	0.650	Nov 2015	-		0.650	-	5.812	-
Test and Evaluation 2	C/CPAF	VARIOUS : VARIOUS	5.204	-		-		-		-		-	-	5.204	-
UISS: Test and Evaluation 1	C/CPIF	ITT : Panama City, FL	2.118	-		-		-		-		-	-	2.118	-
UISS: Test and Evaluation 2	WR	NSWC, PC : Panama City, FL	3.912	1.650	Dec 2013	-		-		-		-	-	5.562	-
UISS: Test and Evaluation 3	WR	NSWC, CCD : Bethesda, MD	1.084	1.670	Dec 2013	-		-		-		-	-	2.754	-
UISS: Test and Evaluation 4	C/CPIF	TBD : TBD	1.244	0.145	Mar 2014	-		-		-		-	-	1.389	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Test and Evaluation 5	WR	COTF : Norfolk, VA	0.000	0.200	Dec 2013	-		-		-		-	-	0.200	-
Subtotal			23.857	5.935		2.038		0.650		-		0.650	-	32.480	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	-		-		-		-		-	-	0.263	-
Travel 1	WR	NAVSEA : WNY, DC	0.084	-		-		-		-		-	-	0.084	-
Government Engineering Support1	WR	NSWC, PC : PANAMA CITY, FL	0.325	-		-		-		-		-	-	0.325	-
MEDAL Program Management Support 2	Various	VARIOUS : VARIOUS	1.400	0.759	Nov 2013	0.768	Nov 2014	-		-		-	-	2.927	-
SBIR Assessment 2	Various	VARIOUS : VARIOUS	0.019	-		-		-		-		-	-	0.019	-
Program Management Support 3	C/CPFF	CACI : WASHINGTON, DC	1.341	-		-		-		-		-	-	1.341	-
Program Management Support 4	C/CPFF	CACI : WASHINGTON, DC	0.080	-		-		-		-		-	-	0.080	-
Government Engineering Support3	WR	NSWC, PC : PANAMA CITY, FL	0.090	-		-		-		-		-	-	0.090	-
Travel 3	C/CPAF	NAVSEA : WNY, DC	0.256	-		-		-		-		-	-	0.256	-
Program Management Support 5	C/CPFF	CACI : WASHINGTON, DC	0.167	-		-		-		-		-	-	0.167	-
Government Engineering Support4	WR	NSWC, PC : PANAMA CITY, FL	0.010	-		-		-		-		-	-	0.010	-
Travel4	C/CPAF	NSWC, PC : PANAMA CITY, FL	0.069	-		-		-		-		-	-	0.069	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HFWB: Program Management Support 6	C/CPAF	VARIOUS : VARIOUS	1.442	-		-		-		-		-	-	1.442	-
HFWB: Government Engineering Support5	WR	NSWC, PC : PANAMA CITY, FL	0.750	-		-		-		-		-	-	0.750	-
HFWB: Travel 5	C/CPAF	NAVSEA : WNY, DC	0.080	-		-		-		-		-	-	0.080	-
Government Engineering Support6	WR	NSWC, PC : PANAMA CITY, FL	1.352	-		-		-		-		-	-	1.352	-
Travel 6	C/CPAF	NAVSEA : WNY, DC	0.238	-		-		-		-		-	-	0.238	-
SBIR Assessment 6	Various	VARIOUS : VARIOUS	0.054	-		-		-		-		-	-	0.054	-
Program Management Support 7	C/CPAF	VARIOUS : VARIOUS	0.350	-		-		-		-		-	-	0.350	-
Acquisition Workforce Fund	Various	VARIOUS : VARIOUS	0.122	-		-		-		-		-	-	0.122	-
UISS: Contractor Management 3	WR	ITT : PANAMA CITY, FL	0.776	-		-		-		-		-	-	0.776	-
UISS: Government Management	WR	VARIOUS : VARIOUS	4.458	-		-		-		-		-	-	4.458	-
UISS: Contractor Management 7	C/CPAF	CACI : WASHINGTON, DC	0.249	-		-		-		-		-	-	0.249	-
UISS: Contractor Management	C/CPFF	TBD : TBD	0.880	1.800	Apr 2014	-		-		-		-	-	2.680	-
UISS: Travel	WR	NAVSEA : WNY, DC	0.320	0.100	Dec 2013	-		-		-		-	-	0.420	-
Subtotal			15.175	2.659		0.768		-		-		-	-	18.602	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			177.187	33.369		12.584		7.861		-		7.861	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name)

PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)

1233 / Surface MCM Mid-life Upgrade

Unmanned Influence Sweep System (UISS)	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones				MSB ●																								
System Development																												
Milestone Documentation				Milestone B Documentation																								
Engineering & Manufacturing Development Phase				E&MD Contract Award ◆ E&MD Phase																								
Test and Evaluation																												
Test Events				Risk Reduction Test																								
Program Moved to Project 1234																												
					Moved to Proj Unit 1234 ■																							

2016PB - 0603502N - 1233

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																							Date: February 2015				
Appropriation/Budget Activity 1319 / 4												R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM												Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade			

HFWB	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020						
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q			
Acquisition Milestones																															
Milestones																															
System Development																															
P3I	P3I																														
Test and Evaluation																															
Production Milestones																															
Contract Award																															
Full Rate Production	FRP																														
Deliveries																															
Installation	Installation																														

2016PB - 0603502N - 1233

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 4

[illegible]PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Progress (%)	Risks	Notes
101	2023-01-15	2023-03-31	Completed	John Doe	50000	100	Low	Project completed ahead of schedule.
102	2023-04-01	2023-06-30	In Progress	Jane Smith	75000	75	Medium	Minor delays in resource allocation.
103	2023-07-01	2023-09-30	On Hold	Mike Johnson	30000	10	High	Waiting for budget approval.
104	2023-10-01	2023-12-31	Planned	Sarah Lee	60000	0	Low	Initial planning phase.
105	2024-01-01	2024-03-31	Planned	David Kim	40000	0	Medium	Conceptualization stage.

1233 / Surface MCM Mid-life Upgrade

MEDAL	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
System Development																												
MEDAL EA v.1 Iterations	Iteration 7																											
MEDAL EA v.2 Development	v.2 Development																											
Program moved to PU 1235																												
Test and Evaluation																												
Enterprise Arch (EA) v.1	EA DT/OA V1																											
Production Milestones																												
MEDAL EA Deliveries	MEDAL EA Deliveries																											

2016PB - 0603502N - 1233

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																					Date: February 2015								
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM										Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade									
USV	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
System Development																													
Upgrade Development										Upgrade Development																			
Program Moved to Project 1234										Moved to Proj Unit 1234																			

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

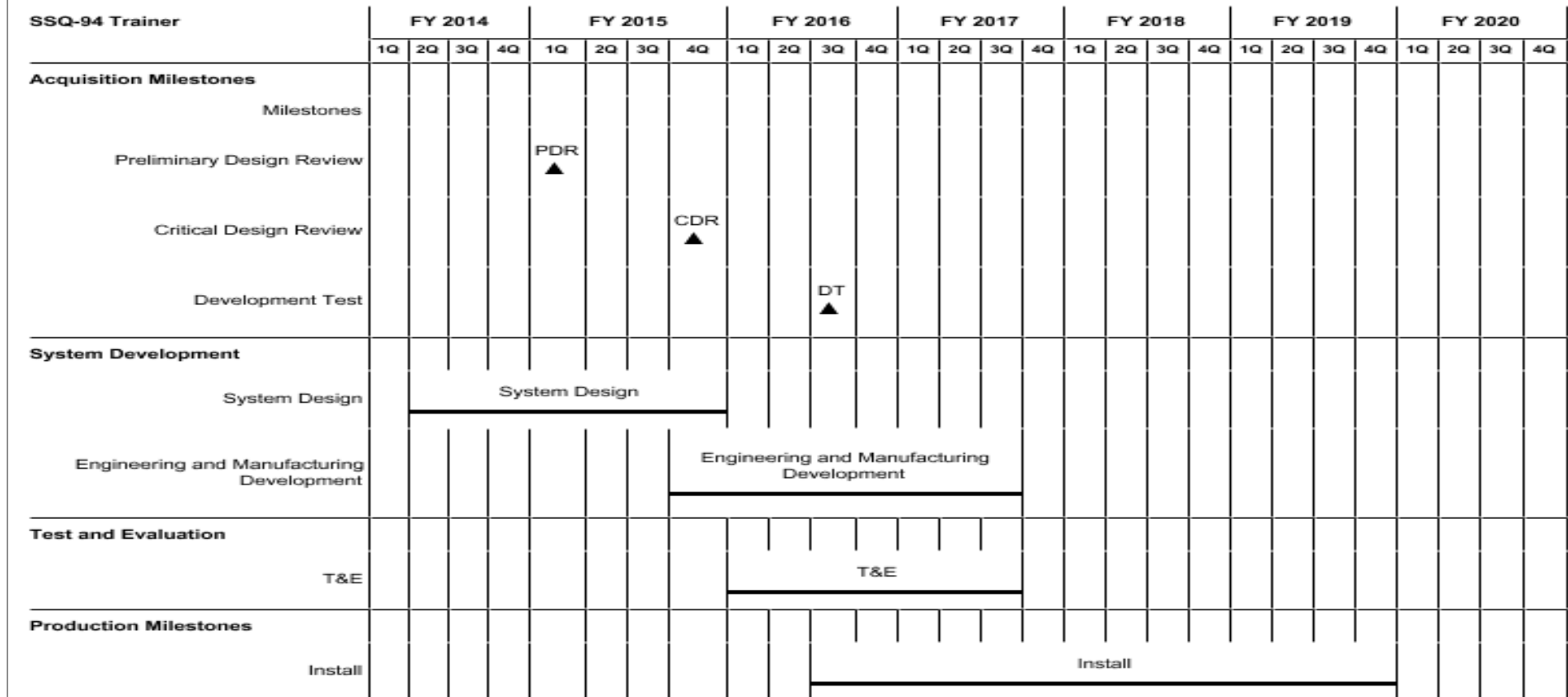
1319 / 4

R-1 Program Element (Number/Name)

PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)

1233 / Surface MCM Mid-life Upgrade



2016PB - 0603502N - 1233

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM	Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Unmanned Influence Sweep System (UISS)				
Acquisition Milestones: Milestones: Milestone B	4	2014	4	2014
System Development: Milestone Documentation: Milestone B Documentation	1	2014	4	2014
System Development: Engineering & Manufacturing Development Phase: E&MD Contract Award	4	2014	4	2014
System Development: Engineering & Manufacturing Development Phase: Engineering & Manufacturing Development phase	4	2014	4	2014
Test and Evaluation: Test Events: Risk Reduction	1	2014	4	2014
Program Moved to Project 1234: Move to PU 1234	1	2015	1	2015
HFWB				
System Development: P3I: P3I Development	1	2014	4	2020
Production Milestones: Full Rate Production: FRP	1	2014	2	2016
Deliveries: Installation: Installation	1	2014	4	2017
MEDAL				
System Development: MEDAL EA v.1 Iterations: EA v.1 Iteration 7	1	2014	4	2015
System Development: MEDAL EA v.2 Development: EA v.2 Development	2	2014	4	2015
System Development: Program moved to PU 1235: Program moved to PU 1235	3	2016	3	2016
Test and Evaluation: Enterprise Arch (EA) v.1: Enterprise Arch (EA) v.1 Development and Test	1	2014	4	2015
Production Milestones: MEDAL EA Deliveries: Deliveries	3	2014	4	2015
USV				
System Development: Upgrade Development:	1	2014	4	2014
System Development: Program Moved to Project 1234:	1	2015	1	2015

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1233 / Surface MCM Mid-life Upgrade	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
SSQ-94 Trainer					
Acquisition Milestones: Preliminary Design Review: Preliminary Design Review		1	2015	1	2015
Acquisition Milestones: Critical Design Review: Critical Design Review		4	2015	4	2015
Acquisition Milestones: Development Test: Development Test		3	2016	3	2016
System Development: System Design: System Design		2	2014	4	2015
System Development: Engineering and Manufacturing Development: Engineering and Manufacturing Development		4	2015	3	2017
Test and Evaluation: T&E: T&E		1	2016	3	2017
Production Milestones: Install: Install		3	2016	4	2019

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1234: Unmanned Surface Vehicle (USV)	-	-	23.974	34.072	-	34.072	10.826	1.695	4.162	6.372	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding prior to FY15 in PE 0603502N Project Unit 1233.

A. Mission Description and Budget Item Justification

This project provides resources for development, improvement and integration of Unmanned Surface Vehicle (USV) Mine Countermeasure systems. A description of the major planned programs include the following:

1) The Unmanned Influence Sweep System (UISS) utilizes an Unmanned Surface Vehicle (USV) integrated with an Unmanned Surface Sweep System (US3), a magnetic/acoustic sweep system developed to sweep acoustic/magnetic influence mines, which can be deployed from the Littoral Combat Ship (LCS) or a ship of opportunity; 2) Mine Hunting USVs (MHUs) include USVs towing AN/AQS-24A mine hunting sonars and associated support equipment, including a command and control center that will be deployed from shore and vessels of opportunity. MHUs are in response to an Urgent Operational Need (UON) from Naval Forces Central Command. FY16 Speed to Fleet (S2F) funding to design and fabricate two replacement MHU vehicles, including new command and control center, and associated in-theater support equipment.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: UISS Product Development	-	13.090	8.163	-	8.163
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A - Funded in Project Unit 1233 in FY14					
FY 2015 Plans: Continue building Engineering Development Model (EDM). Conduct Preliminary Design Review (PDR).Conduct Critical Design Review (CDR).					
FY 2016 Base Plans: Complete EDM.					
FY 2016 OCO Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
Title: UISS Support		-	5.073	1.060	-	1.060
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A - Funded in Project Unit 1233 in FY14						
FY 2015 Plans: Continue engineering and integrated logistic support (ILS) for the Engineering and Manufacturing Development (E&MD) phase.						
FY 2016 Base Plans: Complete engineering and logistic support for E&MD.						
FY 2016 OCO Plans: N/A						
Title: UISS Test and Evaluation		-	0.400	2.600	-	2.600
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A - Funded in Project Unit 1233 in FY14						
FY 2015 Plans: Complete Test and Evaluation Master Plan (TEMP).						
FY 2016 Base Plans: Conduct contractor testing.						
FY 2016 OCO Plans: N/A						
Title: UISS Management		-	1.050	1.034	-	1.034
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A - Funded in Project Unit 1233 in FY14						
FY 2015 Plans:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue EDM contract management. Initiate development of Milestone (MS) C documentation.						
FY 2016 Base Plans: Continue EDM contract management. Continue development of MS C documentation.						
FY 2016 OCO Plans: N/A						
Title: MHU Product Development		-	3.780	20.815	-	20.815
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A						
FY 2015 Plans: Integrate upgraded minehunting sonar (AN/AQS-24B) onboard MHUs, to include upgrading Comand and Control (C2) center, MHU electronics and associated equipment. Conduct performance testing of AN/AQS-24B sonar towed from MHUs.						
FY 2016 Base Plans: Continue improvements to the Comand and Control (C2) center, MHU electronics and associated equipment. Complete integration of AN/AQS-24B sonar with MHU. Conduct performance testing of AN/AQS-24B sonar towed from MHUs. Commence design and fabrication of 2 improved MHU hulls, additional C2 center equipment, and in-theater support equipment. Commence AN/AQS-24B integration with improved MHU vehicles.						
FY 2016 OCO Plans: N/A						
Title: MHU Support		-	0.581	0.400	-	0.400
Articles:		-	-	-	-	-
FY 2014 Accomplishments: N/A						
FY 2015 Plans: Provide engineering and logistic support for upgrade training and forward-deployed operations.						
FY 2016 Base Plans:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015	
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>		Project (Number/Name) 1234 / <i>Unmanned Surface Vehicle (USV)</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Provide engineering and logistic support for product improvements and forward-deployed operations. FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	23.974	34.072	-	34.072

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603596N: <i>LCS Mission Modules</i>	9.000	24.329	2.348	-	2.348	7.129	3.894	-	-	-	46.700
Remarks											
D. Acquisition Strategy											
UISS - Requirements will be documented in the Unmanned Influence Sweep System (UISS) Capability Development Document (CDD). An Engineering and Manufacturing Development (E&MD) contract was awarded in FY14 with an option for Low Rate Initial Production (LRIP).											
E. Performance Metrics											
UISS - Successfully reach Milestone C in 3Q FY17											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM					Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)				
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Product Development 1	C/CPIF	Textron Systems Inc : Hunt Valley, MD	0.000	-		13.090	Feb 2015	8.163	Dec 2015	-		8.163	Continuing	Continuing	Continuing
MHU: Product Development 1	C/FFP	TBD : TBD	0.000	-		2.150	Jan 2015	20.309	Jan 2016	-		20.309	Continuing	Continuing	Continuing
MHU: Product Development 2	WR	NSWC PC : Panama City, FL	0.000	-		0.501	Dec 2014	0.260	Dec 2015	-		0.260	Continuing	Continuing	Continuing
MHU: Product Development 3	WR	NUWC N : Newport, RI	0.000	-		0.360	Dec 2014	0.130	Dec 2015	-		0.130	Continuing	Continuing	Continuing
MHU: Product Development 4	WR	NSWC CD : Bethesda, MD	0.000	-		0.110	Dec 2014	0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
MHU: Product Development 5	WR	Various : Various	0.000	-		0.420	Dec 2014	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
Subtotal			0.000	-		16.631		29.062		-		29.062	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Engineering Support 1	WR	NUWC, N : Newport, RI	0.000	-		0.200	Dec 2014	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
UISS: Engineering Support 2	WR	NSWC, PC : Panama City, FL	0.000	-		1.486	Dec 2014	0.203	Dec 2015	-		0.203	Continuing	Continuing	Continuing
UISS: Engineering Support 3	WR	NSWC, CD : Bethesda, MD	0.000	-		1.586	Dec 2014	0.125	Dec 2015	-		0.125	Continuing	Continuing	Continuing
UISS: Engineering Support 4	C/CPFF	Textron Systems Inc : Hunt Valley, MD	0.000	-		0.550	Feb 2015	0.120	Dec 2015	-		0.120	Continuing	Continuing	Continuing
UISS: Integrated Logistics 1	WR	NSWC, PC : Panama City, FL	0.000	-		0.200	Dec 2014	0.090	Dec 2015	-		0.090	Continuing	Continuing	Continuing
UISS: Integrated Logistics 2	WR	NSWC, CD : Bethesda, MD	0.000	-		0.408	Dec 2014	0.203	Dec 2015	-		0.203	Continuing	Continuing	Continuing
UISS: Integrated Logistics 3	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	0.000	-		0.643	Feb 2015	0.085	Dec 2015	-		0.085	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MHU: Engineering Support 1	WR	SSC, PAC : San Diego, CA	0.000	-		0.210	Dec 2014	0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
MHU: Engineering Support 2	WR	NSWC, PC : Panama City, FL	0.000	-		0.160	Dec 2014	0.200	Dec 2015	-		0.200	Continuing	Continuing	Continuing
MHU: Engineering Support 3	WR	NUWC, N : Newport, RI	0.000	-		0.160	Dec 2014	0.100	Dec 2015	-		0.100	Continuing	Continuing	Continuing
MHU: Engineering Support 4	WR	NSWC, CD : Bethesda, MD	0.000	-		0.110	Dec 2014	0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
MHU: Engineering Support 5	WR	Various : Various	0.000	-		0.180	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	-		5.893		1.376		-		1.376	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Test and Evaluation 1	WR	NSWC, PC : Panama City, FL	0.000	-		0.100	Dec 2014	0.500	Mar 2016	-		0.500	Continuing	Continuing	Continuing
UISS: Test and Evaluation 2	WR	NSWC, CD : Bethesda, MD	0.000	-		0.250	Dec 2014	0.600	Mar 2016	-		0.600	Continuing	Continuing	Continuing
UISS: Test and Evaluation 3	C/CPIF	TBD : TBD	0.000	-		0.050	Dec 2014	1.500	Mar 2016	-		1.500	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.400		2.600		-		2.600	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Travel	WR	NAVSEA : Washington, DC	0.000	-		0.100	Jun 2015	0.100	Jun 2016	-		0.100	-	0.200	-
UISS: Management 1	C/CPAF	TBD : TBD	0.000	-		0.950	Feb 2015	0.934	Dec 2015	-		0.934	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015		
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>				Project (Number/Name) 1234 / <i>Unmanned Surface Vehicle (USV)</i>				

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	-		1.050		1.034		-		1.034	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		23.974		34.072		-		34.072	-	-	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																Date: February 2015														
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM										Project (Number/Name) 1234 / Unmanned Surface Vehicle (USV)										
UISS	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
Program Moved from Project 1233					Moved from Project 1233 ■																									
Acquisition Milestones						Milestone C Documentation																								
Milestones																MS C ▲											IOC ▲			
System Development						E&MD Phase																								
Engineering & Manufacturing Development Phase																														
Reviews						PDR ◆		CDR ◆																						
Test and Evaluation																DT/OA											IOT&E			
Production Milestones																														
Low Rate Initial Production																LRIP Award ◆														
																				</										

2016PB - 0603502N - 1234

UNCLASSIFIED

PE 0603502N: *Surface & Shallow Water MCM*
Navy

R-1 Line #33

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>
--	--

Project (Number/Name)
1234 / Unmanned Surface Vehicle (USV)

[illegible]

2016PB - 0603502N - 1234

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 1234 / <i>Unmanned Surface Vehicle (USV)</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
UISS				
Program Moved from Project 1233: Program Moved from Project 1233	1	2015	1	2015
Acquisition Milestones: Milestone C Documentation	2	2015	2	2017
Acquisition Milestones: Milestones: Milestone C	3	2017	3	2017
Acquisition Milestones: Milestones: Initial Operational Capability	4	2019	4	2019
System Development: Engineering & Manufacturing Development Phase: Engineering & Manufacturing Development phase	1	2015	2	2017
System Development: Reviews: PDR Review	2	2015	2	2015
System Development: Reviews: CDR Decision	4	2015	4	2015
System Development: Test and Evaluation: DT Testing	4	2016	2	2017
System Development: Test and Evaluation: Initial Operational Test & Evaluation	2	2019	3	2019
Production Milestones: Low Rate Initial Production: LRIP Contract Award	3	2017	3	2017
Production Milestones: Low Rate Initial Production: LRIP phase	3	2017	4	2020
Mine Hunting USV (MHU)				
System Development: MHU 1-4 Sonar Upgrade: Schedule Detail	2	2015	4	2016
System Development: MHU 5/6 Design and Fabrication: Schedule Detail	1	2016	2	2017
System Development: MHU 5/6 sonar integration and test: Schedule Detail	2	2017	4	2017
System Development: MHU Product Improvement: Schedule Detail	1	2016	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 1235 / Mine Warfare Planning and Analysis			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1235: Mine Warfare Planning and Analysis	-	-	-	9.064	-	9.064	9.267	7.513	6.823	6.964	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
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.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: MEDAL Product Development Articles: FY 2014 Accomplishments: N/A - Funded in PU 1233 FY 2015 Plans: N/A - Funded in PU 1233 FY 2016 Base Plans: MEDAL EA - Conduct Test & Evaluation of MINEnet Tactical. Continue EA integration activities with LCS Mission Package. Continue to develop Information Assurance documentation for Authority to Operate on Navy networks. MEDAL Next Generation development. Conduct Test & Evaluation of MINEnet Tactical (MEDAL Next Generation). Continue integration activities with LCS Mission Package. Continue to develop Information Assurance documentation for Authority to Operate on Navy networks. Conduct series of Development tests (DTs). Conduct planning for the development of MEDAL Next Generation. Begin development of MEDAL Next Generation course curriculum. Conduct series of regression Tests. FY 2016 OCO Plans: N/A								-	-	5.204	-	5.204
								-	-	-	-	-
Title: MEDAL Support Articles: FY 2014 Accomplishments:								-	-	0.551	-	0.551
								-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 1235 / Mine Warfare Planning and Analysis		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A - Funded in PU 1233 FY 2015 Plans: N/A - Funded in PU 1233 FY 2016 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. Achieve IOC and begin fielding to achieve FOC. Begin the introduction of MEDAL Next Generation capability and Planning on Risk (PoR) functionality via a limited fielding to Fleet Users including Mine Countermeasures Squadrons (MCMRONs) and Naval Mine and Anti Submarine Warfare Command (NMAWC). FY 2016 OCO Plans: N/A						
Title: MEDAL Test and Evaluation Articles:		- -	- -	2.598 -	- -	2.598 -
FY 2014 Accomplishments: N/A - Funded in PU 1233 FY 2015 Plans: N/A - Funded in PU 1233 FY 2016 Base Plans: MEDAL EA - Conduct series of Development tests (DTs) and a series of regression tests. Continue System Integration testing activities with multiple platforms. Conduct planning for subsequent OA events. Deliver to Fleet in accordance with the MEDAL Next Generation Fielding Plan. FY 2016 OCO Plans: N/A						
Title: MEDAL Management Articles:		- -	- -	0.711 -	- -	0.711 -
FY 2014 Accomplishments:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>		Project (Number/Name) 1235 / <i>Mine Warfare Planning and Analysis</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A - Funded in PU 1233					
<i>FY 2015 Plans:</i> N/A - Funded in PU 1233					
<i>FY 2016 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.					
<i>FY 2016 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	-	-	9.064	-	9.064

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 2622/LV075: <i>Mine Sweeping Replacement (MEDAL).</i>	0.995	1.855	2.973	-	2.973	4.349	3.673	1.135	0.798	-	15.778

Remarks

D. Acquisition Strategy

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 Naval Mine Warfare and Anti-Submarine Command (NMAWC). The fleet inputs are then consolidated by COMINELWARCOM 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

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 1235 / <i>Mine Warfare Planning and Analysis</i>

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.

E. Performance Metrics

Mine Warfare and Environmental Decision Aids Library (MEDAL) development to include integration of data fusion techniques and incorporation of Data Access Layer (DAL) architecture to meet FORCENet requirements.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 1235 / Mine Warfare Planning and Analysis			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL Next Generation	C/CPAF	SAIC : McLean, VA	0.000	-		-		5.204	Nov 2015	-		5.204	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		5.204		-		5.204	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL Next Generation	MIPR	NSWC PC : Panama City FL	0.000	-		-		0.551	Nov 2015	-		0.551	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		0.551		-		0.551	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL Next Generation	C/CPAF	SAIC : McLean, VA	0.000	-		-		2.598	Nov 2015	-		2.598	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		2.598		-		2.598	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL EA	MIPR	NSWC PC : Panama City FL	0.000	-		-		0.711	Nov 2015	-		0.711	-	0.711	-
Subtotal			0.000	-		-		0.711		-		0.711	-	0.711	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		9.064		-		9.064	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy							Date: February 2015			
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM			Project (Number/Name) 1235 / Mine Warfare Planning and Analysis			
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name)

PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)

1235 / Mine Warfare Planning and Analysis

MEDAL	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
MEDAL Next Generation Development									MEDAL Next Generation Development																			
Test and Evaluation																												
MEDAL Next Generation Test and Evaluation																												
MEDAL Next Generation Test and Evaluation Phase I																												
MEDAL Next Generation Test and Evaluation Phase II																												
Delivery Milestones																												
MEDAL EA Deliveries																												
MEDAL Next Generation Deliveries Phase I																												
MEDAL Next Generation Deliveries Phase II																												

2016PB - 0603502N - 1235

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015	
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>		Project (Number/Name) 1235 / <i>Mine Warfare Planning and Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MEDAL				
Acquisition Milestones: MEDAL Next Generation Development: MEDAL Next Generation Development	1	2016	4	2020
Test and Evaluation: MEDAL Next Generation Test and Evaluation: MEDAL Test and Evaluation	3	2016	4	2018
Test and Evaluation: MEDAL Next Generation Test and Evaluation Phase II: MEDAL Test and Evaluation	1	2019	4	2020
Delivery Milestones: MEDAL EA Deliveries: MEDAL EA Deliveries	1	2016	3	2017
Delivery Milestones: MEDAL Next Generation Deliveries Phase I: MEDAL Deliveries	3	2017	1	2019
Delivery Milestones: MEDAL Next Generation Deliveries Phase II: MEDAL Deliveries	4	2019	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2094. / Unmanned Underwater Vehicle			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2094.: Unmanned Underwater Vehicle	32.562	19.637	13.674	25.065	-	25.065	73.986	89.327	126.324	154.719	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Large Displacement Unmanned Undersea Vehicle (LDUUV) program will design and build a modular, reconfigurable Unmanned Undersea Vehicle (UUV) with Open Architecture (OA) software (SW) focused on introducing a new class (large displacement) of UUVs to the Navy to provide increased endurance, payload hosting, and delivery capability. The LDUUV will be modular in design and include hotel functionality (guidance and control, navigation, autonomy, situational awareness, core communications, and power distribution), energy and power, propulsion and maneuvering, mission sensors, and communications links. It is intended that modules will have well defined interfaces for the purposes of implementing cost-effective upgrades in future increments to leverage advances in technology. In support of LDUUV Fleet introduction ONR Innovative Naval Prototype (INP) UUVs will be transitioned to be used as User Operational Evaluation Systems (UOES) for operator training, Fleet Exercises (FLEX), and technology risk reduction activities.

The Persistent Littoral Undersea Surveillance (PLUS) Innovative Naval Prototype (INP) Program provides Undersea Surveillance capability by employing mobile Unmanned Undersea Vehicle (UUV) technology. PLUS is being developed in response to an Urgent Operational Need (UON) identified by the Fleet. PLUS uses both conventionally powered UUVs with propellers and UUVs propelled by buoyancy engines (commonly called seaglidors). PLUS INP S&T development program is planned to transition into a prototype User Operational Evaluation System (UOES).

The Persistent Littoral Undersea Surveillance (PLUS) program provides effective, adaptive and persistent undersea surveillance targets over large littoral areas.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: LDUUV Product Development	2.622	2.268	19.505	-	19.505
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					
Developed acquisition documentation, Interface Control Documents (ICD), Capability Development Document(CDD), System Requirement Document (SRD), and Test and Evaluation Master Plan (TEMP) for LDUUV Engineering Development Model (EDM).					
FY 2015 Plans:					
Develop draft Request for Proposal (RFP) for EDM contracts. Complete Interface Control Documents (ICD), CDD, System Requirement Document (SRD), and Test and Evaluation Master Plan (TEMP). Continue risk reduction engineering efforts to include Battery Certification, Autonomy, Reliability, and Submarine integration tasking.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
.					
FY 2016 Base Plans: Release Request for Proposal (RFP) for EDM design and build contract. Conduct source selection for EDM Design and build contract. Prepare Source Selection Evaluation Board report and brief to Source Selection Authority. Complete Test and Evaluation Master Plan (TEMP). Begin risk reduction engineering efforts with INP UUVs as UOES to include SG270 battery certification, advanced autonomy and reliability efforts to prove LDUUV can meet CDD targets for extended unmanned operation, submarine and ship integration efforts enabling LDUUV launch and recovery from submarines and ships, including participation in Fleet exercises to support Tactics, Techniques, Procedures (TTPs) and Concept of Operations (CONOPs) development. LDUUV UOES will also be used to develop operator familiarization training to facilitate LDUUV Developmental and Operational testing events.					
FY 2016 OCO Plans: N/A					
Title: LDUUV Support					
Articles:					
FY 2014 Accomplishments: Developed statutory documents for Gate 3 Review and Milestone A. Prepared for Milestone A. Developed Technical Data Package for Draft RFP.					
FY 2015 Plans: Conduct Milestone A. Develop statutory documents for Gate 4 and 5 Reviews. Draft RFP release. Formulate proposal evaluation team to review bids. Conduct technology risk reduction efforts.					
FY 2016 Base Plans: Complete Gate 4/5 document preparation. Conduct Gate 4/5 review. Begin development of Milestone B documentation.					
FY 2016 OCO Plans: N/A					
Title: LDUUV Management					
Articles:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Provided program management support and travel for the LDUUV program. Program management shall include overall technical guidance and leadership for the program. Oversaw financial and logistics efforts and coordinated with Navy and other DoD organizations and contractors as required to ensure successful execution of the program. Travel and other PM tasking to include briefings, demonstrations, and project planning as required.						
FY 2015 Plans: Provide program management support and travel for the LDUUV 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. Travel and other PM tasking to include briefings, demonstrations, and project planning as required.						
FY 2016 Base Plans: Provide program management support and travel for the LDUUV 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. Travel and other PM tasking to include briefings, demonstrations, and project planning as required.						
FY 2016 OCO Plans: N/A						
Title: PLUS Product Development		2.800	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Completed procurement of the PLUS system consisting of REMUS 600 UUVs, hydrophone towed arrays, SEAGLIDER communication and navigation vehicles. Completed system integration and all relevant certifications, incorporating any updates identified through system testing.						
FY 2015 Plans: N/A						
FY 2016 Base Plans:						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
FY 2016 OCO Plans: N/A						
Title: PLUS Support		1.321	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Completed the documentation of tailored UOES technical documentation to support transition of PLUS to the fleet. Completed Fleet training for operating and maintaining the system for exercises and demonstrations. Completed support plans, CONOPS, tactics techniques and procedure documents, and completed the logistics packages for fleet introduction.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: PLUS Test and Evaluation		4.077	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Participated in tests, demonstrations and Fleet Exercises.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: PLUS Management		0.550	-	-	-	-
Articles:		-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015					
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Provided program management support and travel for PLUS program. Program management included overall technical guidance and leadership for the program. Oversaw financial and logistics efforts and coordination with Navy and other DoD organizations and contractors as required to ensure successful execution of the program. Travel and other PM tasking to include briefings, demonstrations, and project planning as required.								
FY 2015 Plans: N/A								
FY 2016 Base Plans: N/A								
FY 2016 OCO Plans: N/A								
Title: Persistent Littoral Undersea Surveillance (PLUS)				2.866	2.805	-	-	-
Articles:				-	-	-	-	-
Description: Persistent Littoral Undersea Surveillance (PLUS): The Persistent Littoral Undersea Surveillance (PLUS) program provides effective, adaptive and persistent undersea surveillance targets over large littoral areas.								
FY 2014 Accomplishments: -Continued the testing of the updated communications throughout the system. -Continued construction the Revised and Optimized PLUS Sensor Vehicle. -Completed the User Interface for the Operator Consoles for the command and control functions. -Completed the evaluation and implementation of the IA and Anti-Tamper on the PLUS system. -Completed the construction of the optimized array (s) for the system; test integration with autonomy and signal processing. -Completed testing of the USBL Navigation and Carina vehicle. -Completed a Field Test and Evaluation with the Fleet.								
FY 2015 Plans: -Continue all efforts from FY14 unless noted as completed above. -Complete the testing of the updated communications throughout the system								

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>		Project (Number/Name) 2094. / <i>Unmanned Underwater Vehicle</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Complete construction and the testing and evaluation of the Revised and Optimized PLUS Sensor Vehicle						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		19.637	13.674	25.065	-	25.065
C. Other Program Funding Summary (\$ in Millions) N/A						
Remarks						
D. Acquisition Strategy PLUS will develop a prototype User Operational Evaluation System (UOES) in response to an Urgent Operational Need (UON) request from the Fleet. The PLUS UOES will be utilized in a fleet experimentation event to develop Concept of Employment (CONEMP) for a potential follow-on program of record. LDUUV will award Engineering Development Model (EDM) contract(s) to design, build and test LDUUV EDM(s). ONR's LDUUV Innovative Naval Prototype (INP) program will transition prototype vehicles to PMS 406 LDUUV Program of Record (POR) as User Operational Evaluation Systems (UOES). The LDUUV UOES will be utilized in Fleet exercises for risk reduction, operator familiarization training to facilitate Developmental and Operational testing and CONOP development that feeds into LDUUV POR. First ONR LDUUV INP vehicles are expected to transition to UOES in FY 16. This effort will transition to PEO-LCS / PMS406 as a User Operational Evaluation System (UOES) in FY 2013.						
E. Performance Metrics PLUS - Prototype Delivery LDUUV - Achieve MS A Performance metrics for this effort are classified.						

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2094. / Unmanned Underwater Vehicle					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LDUUV Specification	WR	NUWC Newport : Newport, RI	0.225	0.714	Dec 2013	1.049	Dec 2014	-		-		-	-	1.988	-
LDUUV ICD	SS/CPFF	APL/JHU : Laurel, MD	0.000	0.723	Mar 2014	0.585	Feb 2015	-		-		-	-	1.308	-
LDUUV TEMP	Various	Various : Various	0.000	0.685	Dec 2013	0.634	Dec 2014	0.746	Dec 2015	-		0.746	-	2.065	-
LDUUV Source Selection	WR	Various : Various	0.000	-		-		1.480	Dec 2015	-		1.480	-	1.480	-
LDUUV Risk Reduction	WR	NUWC Newport : Newport, RI	0.000	-		-		4.146	Nov 2015	-		4.146	-	4.146	-
LDUUV Risk Reduction - Battery Certification	WR	NSWC Crane : Crane, IN	0.000	-		-		2.786	Dec 2015	-		2.786	-	2.786	-
LDUUV Risk Reduction - Autonomy	SS/CPFF	APL/JHU : Laurel, MD	0.000	-		-		3.247	Jan 2016	-		3.247	-	3.247	-
LDUUV Risk Reduction - Propulsion	SS/CPFF	ARL PSU : State College, PA	0.000	-		-		3.658	Jan 2016	-		3.658	-	3.658	-
LDUUV Risk Reduction - Sonar	SS/CPFF	ARL UT : Austin, TX	0.000	-		-		3.442	Mar 2016	-		3.442	-	3.442	-
PLUS Prototype Hardware	Various	Various : Various	10.499	0.600	Dec 2013	-		-		-		-	-	11.099	-
PLUS System Integration	TBD	Unknown : Unknown	0.000	2.200	Feb 2014	-		-		-		-	-	2.200	-
Arrays	C/CPFF	Ocean Acoustical Services and instrumentation : Lexington, MA	0.500	0.186	Oct 2013	0.102	Oct 2014	-		-		-	-	0.788	-
TDA's	C/CPFF	Ocean Acoustical Services and instrumentation : Lexington, MA	0.300	0.111	Oct 2013	0.050	Oct 2014	-		-		-	-	0.461	-
SP-Intergration	C/CPFF	Ocean Acoustical Services and instrumentation : Lexington, MA	0.500	0.186	Oct 2013	0.050	Oct 2014	-		-		-	-	0.736	-
TDA's	C/CPFF	METRON : Reston, VA	0.300	0.111	Oct 2013	0.050	Oct 2014	-		-		-	-	0.461	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2094. / Unmanned Underwater Vehicle					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Navigation	C/FPRP	Woods Hole Oceanographic Institution : Woods Hole, MA	0.400	0.148	Oct 2013	0.200	Oct 2014	-		-		-	-	0.748	-
SP-Intergration	Reqn	NAVSEA : Baltimore, MD	0.500	0.186	Oct 2013	0.100	Oct 2014	-		-		-	-	0.786	-
TDA's	Reqn	NUWC : Newport, RI	0.300	0.111	Oct 2013	0.150	Oct 2014	-		-		-	-	0.561	-
SP Intergration	Reqn	NUWC : Newport, RI	0.200	0.074	Oct 2013	0.025	Oct 2014	-		-		-	-	0.299	-
Anti-Tamper	Reqn	Sandia Natl Lab : Livermore, CA	0.500	0.186	Oct 2013	0.150	Oct 2014	-		-		-	-	0.836	-
Vehicle	C/CPFF	Hydroid Kongsberg Marine : Pocasset, MA	0.600	0.223	Oct 2013	0.200	Oct 2014	-		-		-	-	1.023	-
Subtotal			14.824	6.444		3.345		19.505		-		19.505	-	44.118	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LDUUV Engineering Support	WR	NUWC Newport : Newport, RI	2.014	1.175	Dec 2013	2.817	Dec 2014	0.654	Nov 2015	-		0.654	-	6.660	-
LDUUV Engineering Support 2	SS/CPFF	APL/JHU : Laurel, MD	2.105	0.951	Mar 2014	1.393	Feb 2015	0.872	Jan 2016	-		0.872	-	5.321	-
LDUUV Engineering Support 3	SS/CPFF	ARL PSU : State College, PA	0.130	0.550	Mar 2014	0.366	Feb 2015	0.423	Jan 2016	-		0.423	-	1.469	-
LDUUV Engineering Support 4	WR	NUWC Keyport : Keyport, WA	0.230	0.100	Dec 2013	0.100	Dec 2014	0.237	Nov 2015	-		0.237	-	0.667	-
LDUUV Engineering Support 5	WR	VAR : VAR	0.000	0.975	Dec 2013	0.830	Dec 2014	0.894	Jan 2016	-		0.894	-	2.699	-
LDUUV Engineering Support 6	C/CPFF	VAR : VAR	0.000	0.785	Mar 2014	1.667	Jan 2015	0.492	Jan 2016	-		0.492	-	2.944	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2094. / Unmanned Underwater Vehicle					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LDUUV ILS Support	WR	SSC Lant : Charleston, SC	0.205	-		-		-		-		-	-	0.205	-
LDUUV ILS Support 2	WR	VAR : VAR	0.277	0.375	Dec 2013	0.723	Jan 2015	0.529	Dec 2015	-		0.529	-	1.904	-
PLUS ILS Support	WR	NUWC Newport : Newport, RI	0.500	0.771	Dec 2013	-		-		-		-	-	1.271	-
PLUS Engineering Support	WR	NUWC Newport : Newport, RI	1.500	0.050	Dec 2013	-		-		-		-	-	1.550	-
PLUS Engineering Support 2	TBD	WHOI : Woods Hole, MA	1.000	0.200	Feb 2014	-		-		-		-	-	1.200	-
PLUS Engineering Support 3	SS/CPFF	APL/JHU : Laurel, MD	1.000	0.200	Feb 2014	-		-		-		-	-	1.200	-
PLUS C2 Support	C/CPFF	APL/UW : Seattle, WA	3.000	0.100	Feb 2014	-		-		-		-	-	3.100	-
Test	Reqn	NUWC : Newport, RI	0.030	0.011	Oct 2013	0.150	Oct 2014	-		-		-	-	0.191	-
Test	Reqn	NSWD : Dahlgren, VA	0.060	0.022	Oct 2013	0.150	Oct 2014	-		-		-	-	0.232	-
Test	Reqn	NUWC : Patuxent, MD	0.020	0.007	Oct 2013	0.075	Oct 2014	-		-		-	-	0.102	-
IA	Reqn	NUWC : Newport, RI	0.150	0.055	Oct 2013	0.075	Oct 2014	-		-		-	-	0.280	-
Subtotal			12.221	6.327		8.346		4.101		-		4.101	-	30.995	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PLUS Fleet Experimentation	Various	Various : Various	1.000	4.077	May 2014	-		-		-		-	-	5.077	-
Test	C/CPFF	Ocean Acoustical Services and instrumentation : Lexington, MA	0.375	0.186	Oct 2013	0.100	Oct 2014	-		-		-	-	0.661	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2094. / Unmanned Underwater Vehicle					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test	C/FPRP	Woods Hole Oceanographic Institution : Woods Hole, MA	0.851	0.372	Oct 2013	0.150	Oct 2014	-		-		-	-	1.373	-
Testing	C/CPFF	Woods Hole Oceanographic Institution : Woods Hole, MA	0.350	0.130	Oct 2013	0.125	Oct 2014	-		-		-	-	0.605	-
Testing	Reqn	NUWC : Newport, RI	0.400	0.037	Oct 2013	0.175	Oct 2014	-		-		-	-	0.612	-
Testing	Reqn	NPS : Monterey, CA	0.010	0.024	Oct 2013	0.025	Oct 2014	-		-		-	-	0.059	-
Testing	Reqn	SPAWAR : San Diego, CA	0.065	0.148	Oct 2013	0.028	Oct 2014	-		-		-	-	0.241	-
Subtotal			3.051	4.974		0.603		-		-		-	-	8.628	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LDUUV Program Management	WR	NUWC Newport : Newport, RI	0.435	0.530	Dec 2013	0.400	Dec 2014	0.450	Dec 2015	-		0.450	Continuing	Continuing	Continuing
LDUUV Program Management 2	TBD	TBD : TBD	0.475	0.360	Mar 2014	0.240	Feb 2015	0.824	Dec 2015	-		0.824	-	1.899	-
LDUUV Travel	Various	NAVSEA : Washington, DC	0.050	0.100	Dec 2013	0.065	Dec 2014	0.185	Dec 2015	-		0.185	-	0.400	-
PLUS Program Management	Various	VAR : VAR	0.739	0.500	Dec 2013	-		-		-		-	-	1.239	-
PLUS Travel	Various	NAVSEA : Washington, DC	0.111	0.050	Dec 2013	-		-		-		-	-	0.161	-
Program	C/CPFF	Systems Planning & Analysis : Arlington, VA	0.300	0.100	Oct 2013	0.150	Oct 2014	-		-		-	-	0.550	-
Program	SS/BA	Kentco : Sterling, VA	0.306	0.121	Oct 2013	0.475	Oct 2014	-		-		-	-	0.902	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 2094. / Unmanned Underwater Vehicle			

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program	SS/BA	Mandex : Fairfax, VA	0.050	0.131	Oct 2013	0.050	Oct 2014	-		-		-	-	0.231	-
Subtotal			2.466	1.892		1.380		1.459		-		1.459	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	32.562	19.637	13.674	25.065	-	25.065	-	-	-

Remarks

UNCLASSIFIED

PE 0603502N: *Surface & Shallow Water MCM*
Navy

R-1 Line #33

R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water</i> <i>MCM</i>
--

2094. / Unmanned Underwater Vehicle

1319 / 4

2016PB - 0603502N - 2094.L24

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																Date: February 2015																					
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM										Project (Number/Name) 2094. / Unmanned Underwater Vehicle																	
PLUS Development										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Prototype Integration																																					
										UUV/Arrays																											
										Glider																											
Fleet Experimentation																																					
UOES Fleet Delivery											MRR1 ◆		Deliver ◆																								
UOES Transition Documentation																																					

2016PB - 0603502N - 2094.L24

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 2094. / <i>Unmanned Underwater Vehicle</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>LDUUV Development</i>				
Acquisition Milestones: Milestones: Gate 3 Review	4	2014	4	2014
Acquisition Milestones: Milestones: Milestone A	2	2015	2	2015
Acquisition Milestones: Milestones: Gate 4/5 Review	4	2015	4	2015
Acquisition Milestones: Milestones: Milestone B	4	2017	4	2017
Acquisition Milestones: Milestones: Gate 6	3	2020	3	2020
Acquisition Milestones: Milestone Documentation: Milestone A Documentation	1	2014	2	2015
Acquisition Milestones: Milestone Documentation: Milestone B Documentation	1	2014	3	2017
System Development: Technology Risk Reduction: Technology Risk Reduction	1	2015	4	2017
System Development: E&MD Contract: Draft Request for Proposal	3	2015	3	2015
System Development: E&MD Contract: Issue RFP	1	2016	1	2016
System Development: E&MD Contract: E&MD Contract Award	1	2017	1	2017
System Development: E&MD Contract: EDM Development	1	2017	4	2020
System Development: Design Reviews: PDR	3	2017	3	2017
System Development: Design Reviews: CDR	3	2018	3	2018
System Development: Testing: Contractor Testing	1	2020	2	2020
System Development: Testing: Developmental Testing/Operational Assessment	3	2020	4	2020
LDUUV UOES (INPs): INP Deliveries: Risk Reduction	1	2016	4	2020
LDUUV UOES (INPs): Fleet Familiarization Training and Exercises: Schedule Detail	2	2016	4	2020
<i>PLUS Development</i>				
Prototype Integration: UUV/Arrays Integration	1	2014	4	2014
Prototype Integration: Glider Integration	1	2014	2	2014

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015	
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Fleet Experimentation: UOES Fleet Delivery: MRR1	2	2014	2	2014
Fleet Experimentation: UOES Fleet Delivery: PLUS Delivery	4	2014	4	2014
Fleet Experimentation: UOES Transition Documentation: Schedule Detail	1	2014	4	2014
PE 0603502N PLUS SPEED TO FLEET R&D Initiative R-4				
User Interface for the Operator consoles for the command and control functions: Development A: SRR	1	2014	1	2015
User Interface for the Operator consoles for the command and control functions: Development A: PDR	3	2014	3	2014
User Interface for the Operator consoles for the command and control functions: Development A: FDR	4	2014	4	2014
User Interface for the Operator consoles for the command and control functions: Development A: T&E	1	2014	1	2014
User Interface for the Operator consoles for the command and control functions: Development A: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	4	2014	4	2014
Evaluation of IA and Anti-Tamper on a test vehicle: Development B: SRR	1	2014	1	2015
Evaluation of IA and Anti-Tamper on a test vehicle: Development B: CDR	3	2014	3	2014
Evaluation of IA and Anti-Tamper on a test vehicle: Development B: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	2	2014	2	2014
Implementation of IA and Anti-Tamper on a test vehicle: Build A: FDR	4	2014	4	2014
Implementation of IA and Anti-Tamper on a test vehicle: Build A: T&E	1	2014	1	2014
Implementation of IA and Anti-Tamper on a test vehicle: Build A: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	2	2014	2	2014
Construction of the optimized array (s) for the system: Development C: CDR	1	2014	1	2014
Construction of the optimized array (s) for the system: Development C: T&E	4	2014	4	2014
Construction of the optimized array (s) for the system: Build B: CDR	3	2014	3	2014
Construction of the optimized array (s) for the system: Build B: T&E	4	2014	4	2014

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015	
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle	
	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Construction of the optimized array (s) for the system: Build B: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	1	2014	1	2014
Testing and integration of the array with autonomy and signal processing: Development D: ICD	1	2014	1	2014
Testing and integration of the array with autonomy and signal processing: Development D: TRR	3	2014	3	2014
Testing and integration of the array with autonomy and signal processing: Development D: T&E	4	2014	4	2014
Testing and integration of the array with autonomy and signal processing: Development D: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	1	2014	1	2014
Pg 2 PE 0603502N PLUS SPEED TO FLEET R&D Initiative R-4				
Testing and evaluation of USBL Navigation: Development E: ICD	1	2014	1	2014
Testing and evaluation of USBL Navigation: Development E: TRR	2	2014	2	2014
Testing and evaluation of USBL Navigation: Development E: T&E	4	2014	4	2014
Testing and evaluation of USBL Navigation: Development E: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	1	2014	1	2014
Testing of the CARINA vehicle: Build C: CDR	1	2014	1	2014
Testing of the CARINA vehicle: Build C: TRR	2	2014	2	2014
Testing of the CARINA vehicle: Build C: T&E	4	2014	4	2014
Testing of the CARINA vehicle: Build C: PLUS is headed to a User Operated Evaluation System,this sets the specifications of the system.	4	2014	4	2014
Fleet Field Test and Evaluation: Development F: IPC	1	2014	1	2014
Fleet Field Test and Evaluation: Development F: MPC	3	2014	3	2014
Fleet Field Test and Evaluation: Development F: FPC	4	2014	4	2014
Construction of the Revised and Optimized PLUS Sensor Vehicle: Build D: CDR	1	2014	1	2014
Construction of the Revised and Optimized PLUS Sensor Vehicle: Build D: TRR	4	2014	4	2014

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy				Date: February 2015	
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2094. / Unmanned Underwater Vehicle	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Construction of the Revised and Optimized PLUS Sensor Vehicle: Build D: T&E		1	2014	1	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>				Project (Number/Name) 2131 / <i>Assault Breaching System</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2131: <i>Assault Breaching System</i>	528.358	49.432	17.908	15.598	-	15.598	21.400	16.424	16.007	17.354	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program provides a combination of U.S. Navy systems to counter the threat to amphibious forces from obstacles and anti-landing/sea mines in the Beach Zone and Surf Zone (0-10 ft water). The Assault Breaching Systems (ABS) consist of a system of systems approach that includes the following programs: JABS - Joint Direct Attack Munition (JDAM) Assault Breaching System; CMS - Countermine System; COBRA - Coastal Battlefield Reconnaissance and Analysis; PNMS - Precision Navigation and Marking System; and C4I - Command, Control, Computers, Communications, and Intelligence. The Assault Breaching Systems enable the Navy-Marine Corps team to conduct Joint Forcible Entry Operations (JFEO), Ship-To-Objective Maneuver (STOM), and other combat operations to project power ashore.

The JDAM Assault Breaching System (JABS) is a currently fielded system that neutralizes surface mines and obstacles in the Beach Zone and Surf Zone. The ABS Tactical Decision Aid optimizes the Desired Points of Impact (DPI) for JDAM munitions to effectively neutralize mines and obstacles while minimizing the required number of munitions and friendly aircraft sorties. Continued testing is required to optimize the ABS Tactical Decision Aid database for the most common enemy mines and obstacles.

The Countermine System (CMS) is the far-term solution for neutralizing buried mines in the Beach Zone and Surf Zone. CMS transitioned from a 6.3 S&T Concept Demonstration effort to a 6.4 development program after a concept decision/AoA in FY06.

Coastal Battlefield Reconnaissance and Analysis (COBRA) is the ABS program to conduct ISR/T. 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 is a multispectral sensor capable of daytime detection of surface-laid minefields and obstacles in the Beach Zone. Block II adds a 3D LIDAR (Light Detection and Ranging) sensor that enables nighttime detection of mines and obstacles in the Beach Zone and the Surf Zone (0-10 ft of water). Block II also adds on-board near real-time processing of multispectral imagery data. Block III adds an interferometric sensor that is capable of detecting buried mines. Blocks II and III will incorporate technology being developed by 6.3 S&T. COBRA consists of a modular payload architecture that can be integrated onto the MQ-8B Fire Scout Vertical Takeoff and Landing Unmanned Aerial Vehicle (VTUAV) or USN manned helicopters like the SH-60. COBRA will serve as the "detect" mission module in the Surf Zone and Beach Zone for the Littoral Combat Ship (LCS) Mine Warfare mission package.

Precision Navigation & Marking System (PNMS) provides navigational upgrades for the Landing Craft, Air Cushion (LCAC); Landing Craft, Utility (LCU); and Amphibious Assault Vehicle (AAV). A system of virtual lane marking improves the navigation ability of these three assault craft which enables them to navigate safely through the neutralized assault lanes provided by JABS and CMS. OPN funds 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 occur during scheduled LCAC SLEPs. AAV Navigation Upgrade : Modernize the navigation system to enable precise transit through the breached lane.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2131 / Assault Breaching System		
Command, Control, Computers, Communications and Intelligence (C4I) system will tie all of the above systems together under an integrated ABS architecture that is compatible with the existing Mine Warfare architecture.						
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development:		29.451	11.309	8.835	-	8.835
Articles:		-	-	-	-	-
FY 2014 Accomplishments:						
CMS - Continued HE neutralization design, development and testing with emphasis on aero-dynamics and structures. Continued CMS neutralizer lethality design and testing (100 darts)						
COBRA - Continue Blk 1 integration Flight Tests with VTUAV. Design and development of COBRA Block II capability.						
Precision Navigation/Marking (PN/M) - continued evaluation/assessment of EDMs supporting PN/M efforts.						
FY 2015 Plans:						
COBRA - Continue Blk 1 integration Flight Tests with VTUAV. Continue design and development of COBRA Block II capability.						
JABS - Design and engineering of weapon effectiveness for beach zones and surf zone.						
Precision Navigation/Marking (PN/M) - continued evaluation/assessment of EDMs supporting PN/M efforts.						
FY 2016 Base Plans:						
COBRA - Continue design and development of COBRA Block II capability.						
JABS - Design and engineering of weapon effectiveness for beach zones and surf zone.						
Precision Navigation/Marking (PN/M) - continue evaluation/assessment of EDMs supporting PN/M efforts.						
FY 2016 OCO Plans:						
N/A						
Title: Technical Support:		0.926	1.053	1.105	-	1.105
Articles:		-	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM		Project (Number/Name) 2131 / Assault Breaching System		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: CMS/COBRA - Provided mine magazine inventory management and shipping, contract and test/studies, C4I Data Fusion. Provided technical /acquisition support and documentation (ILS, training, data, drawings). FY 2015 Plans: COBRA - Provide mine magazine inventory management and shipping, contract and test/studies, C4I Data Fusion. Provide technical /acquisition support and documentttation (ILS, training, data, drawings). FY 2016 Base Plans: COBRA - Provide mine magazine inventory management and shipping, contract and test/studies, C4I Data Fusion. Provide technical /acquisition support and documentttation (ILS, training, data, drawings). FY 2016 OCO Plans: N/A						
Title: Test and Evaluation: Articles:		16.664 -	4.427 -	4.523 -	- -	4.523 -
FY 2014 Accomplishments: CMS - Continued 100 shot for the HE Neutralizer. COBRA - Advanced component Block II development testing. Conducted Block I Operational Assessment (OA). PN/M - Continue to test the Precision Navigation and Marking design capability. FY 2015 Plans: COBRA - Conduct Block I Operational Assessment (OA). Advanced component Block II compnent Development Testing. JABS - Surf Zone (SZ) and Beach Zone (BZ) characterization testing. PN/M - Continue to test the Precision Navigation and Marking design capability. FY 2016 Base Plans: COBRA - Block I Development Testing (DT) and IOT&E. Continue Block II component Development Testing (DT).						

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>		Project (Number/Name) 2131 / <i>Assault Breaching System</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
PN/M - Continue to test the Precision Navigation and Marking design capability FY 2016 OCO Plans: N/A					
Title: Management:	2.391	1.119	1.135	-	1.135
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Provided Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
FY 2015 Plans: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
FY 2016 Base Plans: Mine magazine inventory management and shipping, contract management and tests/studies, C4I/Data fusion.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	49.432	17.908	15.598	-	15.598

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2624: <i>SHALLOW WATER MCM SHIP</i>	12.748	-	18.770	-	18.770	9.344	8.880	5.602	5.723	-	77.171

Remarks

D. Acquisition Strategy

Countermine/Counter Obstacle (CM/CO)is JDAM Assault Breaching System (JABS) and ABS Tactical Decision Aid testing is ongoing.

Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T) - COBRA Block I achieved MS C in 3rd QTR FY09. COBRA Block II technology transferred from ONR and will achieve MS B in 2nd QTR FY17. COBRA Block III technology will transition in FY18.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 2131 / <i>Assault Breaching System</i>
Precision Navigation & Marking System (PNMS) - 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 2nd QTR FY15. All of the above systems continue to meet or exceed their Key Performance Parameters and benefit from effective program management that efficiently allocates the funding it receives. Any delays in program timelines and increases in costs are due directly to previous year's budget cuts. <u>E. Performance Metrics</u> Successful COBRA integration, flight tests and Operational Assessment (OA) into the Vertical Take-off Unmanned Arial Vehicle (VTUAV).		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2131 / Assault Breaching System					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	Arete : MELBOURNE, FL	144.397	14.545	Nov 2013	7.969	Nov 2014	6.802	Nov 2015	-		6.802	-	173.713	-
Primary Hardware Dev, CMS	C/CPAF	Boeing : St. Louis, MO	98.024	1.950	Nov 2013	-		-		-		-	-	99.974	-
Ancillary Hardware Dev, JABS	C/CPAF	Unknown : Unknown	18.864	3.214	Nov 2013	-	Nov 2014	-		-		-	-	22.078	-
Systems Engineering, COBRA	WR	NSWC, PC : PANAMA CITY, FL	20.860	-		-		-		-		-	-	20.860	-
Software Dev, COBRA	WR	NAVAIR : PANAMA CITY, FL	12.958	-		-		-		-		-	-	12.958	-
Systems Engineering, CMS	WR	NSWC, PC : PANAMA CITY, FL	30.505	1.000	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
jJABS	WR	NSWC PC : NSWC IH	0.000	5.418	May 2014	0.700	Nov 2014	-		-		-	-	6.118	-
Training Dev, COBRA	WR	NSWC, PC : PANAMA CITY, FL	8.491	0.845	Nov 2013	0.775	Nov 2014	0.720	Nov 2015	-		0.720	-	10.831	-
Tooling	WR	NSWC, PC : PANAMA CITY, FL	0.860	-		-		-		-		-	-	0.860	-
ABS IPT/Test Assets/Proj Eng	WR	NSWC, PC : PANAMA CITY, FL	8.046	0.417	Nov 2013	0.351	Nov 2014	0.301	Nov 2015	-		0.301	-	9.115	-
Precision Navigation & Marking	WR	NSWC, PC : PANAMA CITY, FL	13.578	2.062	Nov 2013	1.514	Nov 2014	1.012	Nov 2015	-		1.012	-	18.166	-
Subtotal			356.583	29.451		11.309		8.835		-		8.835	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	18.581	0.704	Oct 2013	0.797	Nov 2014	0.849	Nov 2015	-		0.849	-	20.931	-
Software Development	WR	NSWC, PC : PANAMA CITY, FL	8.037	-		-		-		-		-	-	8.037	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2131 / Assault Breaching System					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	NSWC, IH : NDIAN HEAD, MD	2.712	-		-		-		-		-	-	2.712	-
Configuration Management	WR	NSWC, PC : PANAMA CITY, FL	3.744	-		-		-		-		-	-	3.744	-
Technical Data	WR	NSWC, PC : PANAMA CITY, FL	2.588	-		-		-		-		-	-	2.588	-
Studies & Analysis	WR	NSWC, PC : PANAMA CITY, FL	5.642	0.222	Oct 2013	0.256	Nov 2014	0.256	Nov 2015	-		0.256	-	6.376	-
GFE	WR	NSWC, PC : PANAMA CITY, FL	0.400	-		-		-		-		-	-	0.400	-
Subtotal			41.704	0.926		1.053		1.105		-		1.105	-	44.788	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	42.894	13.106	Nov 2013	2.424	Nov 2014	2.474	Nov 2015	-		2.474	-	60.898	-
Operational Test & Evaluation	WR	NSWC/ IH, PC : NDIAN HEAD, PANAMA CITY	8.655	-		-		-		-		-	-	8.655	-
Tooling	WR	NSWC/ IH, PC : NDIAN HEAD, PANAMA CITY	0.700	-		-		-		-		-	-	0.700	-
GFE	WR	NSWC/ IH, PC : NDIAN HEAD, PANAMA CITY	0.400	-		-		-		-		-	-	0.400	-
Development Test	C/FP	NSWC PC : Panama City, FL	6.024	3.558	Oct 2013	2.003	Nov 2014	2.049	Nov 2015	-		2.049	-	13.634	-
Subtotal			58.673	16.664		4.427		4.523		-		4.523	-	84.287	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 2131 / Assault Breaching System					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	CACI, Northrup Grumman : DC, FL	10.575	0.120	Oct 2013	0.120	Nov 2014	0.136	Nov 2015	-		0.136	-	10.951	-
Government Engineering Support	WR	NSWC, IH : NDIAN HEAD, MD	33.144	1.947	Oct 2013	0.488	Oct 2014	0.498	Nov 2015	-		0.498	-	36.077	-
Program Management Support	WR	NSWC/ IH, PC : NDIAN HEAD, PANAMA CITY	24.525	0.250	Oct 2013	0.441	Nov 2014	0.441	Nov 2015	-		0.441	-	25.657	-
Travel	WR	NAVSEA : WNY, DC	1.509	0.074	Oct 2013	0.070	Nov 2014	0.060	Nov 2015	-		0.060	-	1.713	-
Assessment/BTR	C/CPAF	VARIOUS : VARIOUS	1.434	-		-		-		-		-	-	1.434	-
Acquisition Workforce	Various	VARIOUS : VARIOUS	0.211	-		-		-		-		-	-	0.211	-
Subtotal			71.398	2.391		1.119		1.135		-		1.135	-	76.043	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			528.358	49.432		17.908		15.598		-		15.598	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy																							Date: February 2015						
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM										Project (Number/Name) 2131 / Assault Breaching System									
Assault Breaching System		FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																													
CMS																													
System Development																													
CMS		CMS SD 6.4																											
Platform Integration		CMS System Design/Platform Integration																											
ABS (ISR/Navigation/C4I System Development)		ISR/NAV/C4I S&D																											
Test and Evaluation																													
HE Dart Testing																													
Inert Dart Testing																													
Fuse & Dispenser Testing																													
System Development Testing (Fuse, Dispenser)																													

2016PB - 0603502N - 2131

UNCLASSIFIED

PE 0603502N: *Surface & Shallow Water MCM*
Navy

R-1 Line #33

R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water</i> <i>MCM</i>
--

2131 / Assault Breaching System

MCM

2016PB - 0603502N - 2131

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 2131 / <i>Assault Breaching System</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Assault Breaching System</i>				
System Development: CMS: CMS System Development 6.4	1	2014	2	2014
System Development: Platform Integration: CMS System Design/Platform Integration	1	2014	2	2014
System Development: ABS (ISR/Navigation/C4I System Development): ISR/Navigation/C4I System Development	1	2014	2	2014
Test and Evaluation: HE JABS Surf Zone (SZ)	1	2014	2	2014
Test and Evaluation: Inert JABS Beach Zone (BZ)	1	2014	2	2014
Test and Evaluation: System Development Testing (Fuse, Dispenser): System Development Testing (Fuse, Dispenser)	1	2014	2	2014
<i>COBRA</i>				
Acquisition Milestones: COBRA Blocks Development: Advanced Component Development Block II	4	2014	3	2016
Acquisition Milestones: COBRA Blocks Development: COBRA Block II EMD	1	2018	2	2020
Acquisition Milestones: COBRA Blocks Development: COBRA Block II Milestone B	2	2017	2	2017
Acquisition Milestones: COBRA Blocks Development: LRIP Decision Review Block II	2	2018	2	2018
Test & Evaluation: COBRA Block I: COBRA Block I Assessment	2	2015	3	2015
Test & Evaluation: COBRA Block I: COBRA Block I Techeval	4	2015	2	2016
Test & Evaluation: COBRA Block I: COBRA Block I IOT&E	3	2016	4	2016
Production Milestones: COBRA Production (With Block Options): COBRA Block I	1	2014	3	2017
Production Milestones: COBRA Production (With Block Options): COBRA Block II LRIP	2	2018	4	2020
Deliveries: COBRA Block I: Block I	2	2014	4	2018
Deliveries: COBRA Block II: Block II	2	2019	4	2020

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>				Project (Number/Name) 3123 / <i>SMCM UUV</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3123: <i>SMCM UUV</i>	88.695	14.303	18.193	17.392	-	17.392	5.196	5.376	5.594	8.026	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification
The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program develops Unmanned Underwater Vehicles to support clandestine mine detection capability against volume and bottom mines including buried mine detection. Equipment includes vehicles and associated systems support equipment. Potential P3I candidates to start in FY17 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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Knifefish SMCM UUV LFBB Articles: FY 2014 Accomplishments: Continued vehicle fabrication. Commence Development Testing preparations. FY 2015 Plans: Complete vehicle fabrication. Systems integration and environmental testing. Continue Engineering and Manufacturing Development (E&MD)phase. FY 2016 Base Plans: Continue Engineering and Manufacturing Development (E&MD)phase. Complete Developmental Testing/ Operational Assessment. FY 2016 OCO Plans: N/A	14.303	18.193	17.392	-	17.392
	-	-	-	-	-
Accomplishments/Planned Programs Subtotals	14.303	18.193	17.392	-	17.392

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

Remarks

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 3123 / <i>SMCM UUV</i>
D. Acquisition Strategy The Knifefish program was initiated in FY11 to develop Surface Mine Countermeasure Unmanned Undersea Vehicles (SMCM UUV) equipped with Low Frequency Broadband (LFBB) sonar that provides volume and bottom mine detection including buried mine detection capability. Initial procurement of the SMCM UUV with LFBB begins in FY17.		
E. Performance Metrics Successful Milestone C in Q1 FY17. Reach Full Rate Production Decision in Q3 FY18.		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM				Project (Number/Name) 3123 / SMCM UUV					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	15.142	-		-		-		-		-	Continuing	Continuing	Continuing
Knifefish Development	C/CPIF	Various : Various	17.033	-		-		-		-		-	-	17.033	-
Knifefish Development 2	C/CPIF	General Dynamics AIS : McLeansville, NC	32.165	11.345	Dec 2013	13.484	Dec 2014	11.589	Dec 2015	-		11.589	Continuing	Continuing	Continuing
Software Development	WR	NSWC, PC : PANAMA CITY, FL	0.805	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			65.145	11.345		13.484		11.589		-		11.589	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	12.443	1.519	Dec 2013	1.353	Dec 2014	1.800	Dec 2015	-		1.800	Continuing	Continuing	Continuing
Engineering Support 2	WR	NUWC, Newport : NEWPORT, RI	3.666	0.624	Dec 2013	0.636	Dec 2014	0.649	Dec 2015	-		0.649	Continuing	Continuing	Continuing
Engineering Support 3	WR	VARIOUS : VARIOUS	2.384	0.695	Feb 2014	1.830	Dec 2014	1.293	Dec 2015	-		1.293	Continuing	Continuing	Continuing
Subtotal			18.493	2.838		3.819		3.742		-		3.742	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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, MS	0.526	-		-		-		-		-	Continuing	Continuing	Continuing
Government T&E Support	WR	VARIOUS : VARIOUS	1.213	-		-		-		-		-	Continuing	Continuing	Continuing

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603502N / Surface & Shallow Water MCM						Project (Number/Name) 3123 / SMCM UUV			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	COMOPTEVFOR : NORFOLK, VA	0.391	0.090	Feb 2014	-	Dec 2014	0.280	Dec 2015	-		0.280	Continuing	Continuing	Continuing
Government T&E Support	WR	NSWC, PC : PANAMA CITY, FL	0.000	-		-	Dec 2014	0.853	Dec 2015	-		0.853	-	0.853	-
Subtotal			2.130	0.090		-		1.133		-		1.133	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Need Item Text	C/BA	Not Specified : Not Specified	0.000	-		-		-		-		-	-	-	-
Program Management Support	C/CPFF	VARIOUS : WASHINGTON, DC	2.650	-	Feb 2014	0.840	Jan 2015	0.878	Dec 2015	-		0.878	Continuing	Continuing	Continuing
Travel	WR	NAVSEA : WNY, DC	0.230	0.030	Dec 2013	0.050	Dec 2014	0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
Acquisition Workforce	WR	VARIOUS : VARIOUS	0.047	-		-		-		-		-	-	0.047	-
Subtotal			2.927	0.030		0.890		0.928		-		0.928	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			88.695	14.303		18.193		17.392		-		17.392	-	-	-
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity
1319 / 4

R-1 Program Element (Number/Name)
PE 0603502N / Surface & Shallow Water
MCM

Project (Number/Name)
3123 / SMCM UUV

Proj 3123	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Knifefish Acquisition Program																												
Knifefish Milestones													MS ▲				IOC ▲											
Knifefish Contract Award																												
Knifefish Development																												
Knifefish Design Reviews																												
Knifefish Test Events																												
Knifefish LRIP																												
Knifefish Full Rate Production Decision																												
Knifefish Full Rate Production																												
Knifefish P3I																												

2016PB - 0603502N - 3123

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603502N / <i>Surface & Shallow Water MCM</i>	Project (Number/Name) 3123 / <i>SMCM UUV</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3123</i>				
Knifefish Acquisition Program: Knifefish Milestones: Milestone C	1	2017	1	2017
Knifefish Acquisition Program: Knifefish Milestones: IOC	2	2018	2	2018
Knifefish Acquisition Program: Knifefish Development:	1	2014	4	2017
Knifefish Acquisition Program: Knifefish Test Events: DT/OA	2	2016	4	2016
Knifefish Acquisition Program: Knifefish Test Events: OT	4	2017	1	2018
Knifefish Acquisition Program: Knifefish LRIP:	2	2017	2	2018
Knifefish Acquisition Program: Knifefish Full Rate Production Decision:	3	2018	3	2018
Knifefish Acquisition Program: Knifefish Full Rate Production:	3	2018	4	2020
Knifefish Acquisition Program: Knifefish P3I:	1	2017	4	2020