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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601N: <i>Mine Development</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	195.595	3.874	8.335	5.041	-	5.041	4.127	3.670	3.741	3.803	Continuing	Continuing
0267: <i>Mine Improvements</i>	195.595	3.874	8.335	5.041	-	5.041	4.127	3.670	3.741	3.803	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas: (1) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations; (2) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms; and (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields.

Data Recorders: Mine data recorders record mine target detection and mine fire data during in-water reliability testing. Current recorders are no longer supportable and cannot be used with the Quickstrike Mod 3. New recorders will work with the programmable Target Detecting Device MK 71 used in the Mod 3. They will support in-water testing of all in-service Quickstrike Mods (0, 1, and 3).

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	3.933	8.335	5.071	-	5.071
Current President's Budget	3.874	8.335	5.041	-	5.041
Total Adjustments	-0.059	0.000	-0.030	-	-0.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.059	0.000			
• Program Adjustments	0.000	0.000	-0.003	-	-0.003
• Rate/Misc Adjustments	0.000	0.000	-0.027	-	-0.027

Change Summary Explanation

Total Adjustments: FY14 -\$0.030 for Program/Misc. Adjustments.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy									DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604601N: Mine Development				PROJECT 0267: Mine Improvements			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
0267: Mine Improvements	195.595	3.874	8.335	5.041	-	5.041	4.127	3.670	3.741	3.803	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas: (1) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations; (2) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms; and (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields.												
Data Recorders: Mine data recorders record mine target detection and mine fire data during in-water reliability testing. Current recorders are no longer supportable and cannot be used with the Quickstrike Mod 3. New recorders will work with the programmable Target Detecting Device MK 71 used in the Mod 3. They will support in-water testing of all in-service Quickstrike Mods (0, 1, and 3).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: Product Development									2.240	4.144	2.667	
									0	0	0	
FY 2012 Accomplishments: Software Development: Modified algorithms based on testing results. Began generating operational data (OPDATA) for the Fast Patrol Boat, Air Cushioned Vehicle, and large ship algorithms. Continued to work action items assigned by Navy and Air Force fuse safety boards. Continued modifications to mine data recorder design. Worked with P-8 Aircraft mission planning software designers to include transfer of MEDAL data to their system.												
FY 2013 Plans: Software Development: Modify algorithms based on testing results. Continue generating OPDATA for fast patrol boat, air cushioned vehicle, and large ship algorithms. Continue to work action items assigned by Navy and Air Force fuse safety boards. Complete modification to mine data recorder design. Continue to work with P-8 Aircraft mission planning software designers to include transfer of MEDAL data to their system. Perform trade study for mine standoff delivery (Wing Kit Development) capability and develop modification to existing system.												
FY 2014 Plans:												

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Modify algorithms based on testing results. Continue generating OPDATA for the Fast Patrol Boat, Air cushioned Vehicle, and large ship algorithms.			
Title: Support FY 2012 Accomplishments: Integrated Logistics Support FY 2013 Plans: Integrated Logistics Support FY 2014 Plans: Integrated Logistics Support		Articles: 0.050 0	0.100 0
Title: Management: FY 2012 Accomplishments: Program Management Support and Travel FY 2013 Plans: Program Management Support and Travel FY 2014 Plans: Program Management Support and Travel		Articles: 0.256 0	0.500 0
Title: Test and Evaluation FY 2012 Accomplishments: Conducted second in-water test of developed algorithms and begin analysis. Continued Aircraft certification. FY 2013 Plans: Conduct one in-water test to determine baseline reliability of the Quickstrike MK 65 Mod 3 system. Continue Aircraft certification (to include F/A-18 and B-52). Perform test and evaluation on the MINES standoff (Wing Kit) capability. FY 2014 Plans: Continue Aircraft certification (to include F/A-18 and B-52).		Articles: 1.328 0	3.591 0
Accomplishments/Planned Programs Subtotals		3.874	5.041

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C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Complete</u>	<u>Total Cost</u>
• WPN 3231: <i>Quickstrike Mine</i>	5.770	6.852	7.800		7.800	10.477	10.244	9.704	9.870	0.000	72.191
Remarks											
D. Acquisition Strategy											
Procurement of Target Detecting Device (TDD) Mk 71 and associated components.											
E. Performance Metrics											
Successfully develop new mine data recorders to work with the programmable TDD MK 71 used in the Mod 3.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604601N: Mine Development				PROJECT 0267: Mine Improvements					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Development	WR	NSWC PC:WX	112.801	0.653	Nov 2011	2.844	Nov 2012	1.500	Nov 2013	-		1.500	Continuing	Continuing	Continuing
Ancillary Hardware Development	C/CPAF	Various:Various	2.658	0.500	Nov 2011	0.200	Nov 2012	0.000		-		0.000	Continuing	Continuing	Continuing
Ship Suitability	WR	NSWC PC:WX	2.467	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
GFE	C/CPAF	Various:Various	4.790	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development	C/CPAF	Various:WX	15.449	1.106	Nov 2011	1.100	Nov 2012	1.167	Nov 2013	-		1.167	0.000	18.822	
Future Mines	C/CPAF	Various:Various	0.000	0.000	Nov 2011	0.000		0.000		-		0.000	0.000	0.000	
Subtotal			138.165	2.259		4.144		2.667		0.000		2.667			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 PC:WX	0.572	0.050	Nov 2011	0.100	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Subtotal			0.572	0.050		0.100		0.050		0.000		0.050			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 PC:WX	20.231	1.328	Nov 2011	3.591	Nov 2012	2.020	Nov 2013	-		2.020	0.000	27.170	
Subtotal			20.231	1.328		3.591		2.020		0.000		2.020	0.000	27.170	

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	C/CPAF	Various:Various	35.831	0.221	Nov 2011	0.500	Nov 2012	0.304	Nov 2013	-		0.304	0.000	36.856	
Program Management Support	C/CPAF	Various:Various	0.728	0.000	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Travel	Various	NAVSEA:PD	0.058	0.016	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DAWDF	Various	Various:Various	0.010	0.000	Nov 2011	0.000		0.000		-		0.000	0.000	0.010	
Subtotal			36.627	0.237		0.500		0.304		0.000		0.304			
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			195.595	3.874		8.335		5.041		0.000		5.041			
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy																							DATE: April 2013						
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)												R-1 ITEM NOMENCLATURE PE 0604601N: Mine Development										PROJECT 0267: Mine Improvements							
Proj 0267	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				
	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																													
Minefield Planning Tactical Decision Aid Improvements	Minefield Planning Tactical Decision Aid Improvements																												
Mine Data Recorder Development	Mine Data Recorder Development																												
Mines Standoff Capability					Mines Standoff Capability																								
Test and Evaluation																													
Mines Standoff Capability					Mines Stadoff Capability																								
Quickstrike Mod 3 Aircraft Certification	Quickstrike Mod 3 Aircraft Certification																												
Quickstrike Mod 3 Algorithm Development and Testing	Quickstrike Mod 3 Algorithm Development and Testing																												
Production Milestones																													
Mine Data Recorder Production								Mine Data Recorder Production																					
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601N: <i>Mine Development</i>	PROJECT 0267: <i>Mine Improvements</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0267				
System Development: Minefield Planning Tactical Decision Aid Improvements:	1	2012	4	2018
System Development: Mine Data Recorder Development:	1	2012	3	2013
System Development: Mines Standoff Capability:	1	2013	4	2013
Test and Evaluation: Mines Standoff Capability:	2	2013	4	2013
Test and Evaluation: Quickstrike Mod 3 Aircraft Certification:	1	2012	4	2018
Test and Evaluation: Quickstrike Mod 3 Algorithm Development and Testing:	1	2012	4	2018
Production Milestones: Mine Data Recorder Production:	4	2013	3	2016