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

<b>APPROPRIATION/BUDGET ACTIVITY</b>			<b>R-1 ITEM NOMENCLATURE</b>								
1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			PE 0604601N: <i>Mine Development</i>								
<b>COST (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	2.131	5.455	3.933	-	3.933	3.450	3.615	3.670	3.721	Continuing	Continuing
0267: <i>Mine Improvements</i>	2.131	5.455	3.933	-	3.933	3.450	3.615	3.670	3.721	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

(U) 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	2.240	5.455	5.604	-	5.604
Current President's Budget	2.131	5.455	3.933	-	3.933
Total Adjustments	-0.109	-	-1.671	-	-1.671
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.077	-			
• Program Adjustments	-	-	-1.530	-	-1.530
• Section 219 Reprogramming	-0.032	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.141	-	-0.141

**Change Summary Explanation**

Technical: Not applicable.

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**DATE:** February 2011

**APPROPRIATION/BUDGET ACTIVITY**

1319: *Research, Development, Test & Evaluation, Navy*  
BA 5: *Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**

PE 0604601N: *Mine Development*

Schedule: Not applicable.

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604601N: <i>Mine Development</i>	<b>PROJECT</b> 0267: <i>Mine Improvements</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0267: <i>Mine Improvements</i>	2.131	5.455	3.933	-	3.933	3.450	3.615	3.670	3.721	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

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

	FY 2010	FY 2011	FY 2012
<b>Title:</b> Product Development	1.670	2.881	2.299
<b>Articles:</b>	0	0	0
<b>FY 2010 Accomplishments:</b>			
Software Development: Modifying existing algorithms to implement improvements. Prepare data for minefield planners to us against certain threats. Begin analysis of Quickstrike effectiveness against future threats. Prepare systems and safety engineering information for Navy and Air Force safety boards.			
<b>FY 2011 Plans:</b>			
Software Development: Continue modifying existing algorithms to implement improvements. Prepare data for minefield planners to use against additional threats. Complete analysis of Quickstrike effectiveness against future threats. Give presentation to joint Navy and Air force fuze safety board, and respond to action items from the board. Begin design modifications of mine data recorders used for in-water reliability testing for use with Quickstrike MK62/63 Mod 3. Conduct Mining AoA Study			
<b>FY 2012 Plans:</b>			
Software Development: Continue initial development of the High Speed Vessels/Shallow Water Twin Hull (HSV/SWATH) algorithm for the Quickstrike Mod 3 (Target Detecting Device Mk 71 Mod 1). Conduct in-water testing of the Air Cushioned Vehicle algorithm and HSV/SWATH algorithm. Complete generating operational data (OPDATA) for the Fast Patrol Boat and			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>
large ship algorithms for minefield planning, and begin generating OPDATA for the Air Cushioned Vehicle algorithm. Generate OPDATA for the Air Cushioned Vehicle algorithm for minefield planning. Continue the second phase of development for the ForceNet-compliant Tactical Decision Aid for minefield planning in MEDAL/GCCS-M, to pass minefield plans directly to ForceNet target and aircraft-mission planning software. Integrated Logistic Support (ILS).				
<b>Title:</b> Support				
		<b>Articles:</b>	0.391 0	0.012 0
				0.344 0
<b>FY 2010 Accomplishments:</b> Integrated Logistics Support				
<b>FY 2011 Plans:</b> Integrated Logistics Support				
<b>FY 2012 Plans:</b> Integrated Logistics Support				
<b>Title:</b> Test and Evaluation				
			<b>Articles:</b>	1.034 0
		-	2.315 0	
<b>FY 2011 Plans:</b> Conduct two in-water tests of two developed algorithms and begin analysis. Provide engineering and material support to NAVAIR and Air Force for analysis and testing of mines with Quickstrike MK62/63 Mod 3.				
<b>FY 2012 Plans:</b> Continue Aircraft certification. Perform algorithm validation and operational test.				
<b>Title:</b> Management:				
			<b>Articles:</b>	0.256 0
		0.070 0	0.247 0	
<b>FY 2010 Accomplishments:</b> Program Management Support and Travel				
<b>FY 2011 Plans:</b> Program Management Support and Travel				
<b>FY 2012 Plans:</b> Program Management Support and Travel				
<b>Accomplishments/Planned Programs Subtotals</b>		2.131	5.455	3.933

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2012 Navy		<b>DATE:</b> February 2011
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604601N: <i>Mine Development</i>	<b>PROJECT</b> 0267: <i>Mine Improvements</i>

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• WPN 3231: <i>Quickstrike Mine</i>	4.666	6.090	5.770	0.000	5.770	6.868	9.655	9.435	9.567	0.000	52.051

**D. Acquisition Strategy**

The Target Detecting Device (TDD) Mk 71 Mod 1 was modified by the TDD Adapter Mk 157 - used in Quickstrike Mk 65 Mod 3 kits, the Safe and Arming Device Mk 75, TDD Adapter Mk 163, and Lithium Battery Mk 176 - used in the Quickstrike Mk 62/63 Mod 3 kits.

**E. Performance Metrics**

Successfully develop new mine data recorders to work with the programmable Target Detecting Device MK 71 used in the Mod 3.

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604601N: <i>Mine Development</i>	<b>PROJECT</b> 0267: <i>Mine Improvements</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Primary Hardware Development	WR	NSWC PC:WX	111.613	1.188	Nov 2010	0.654	Nov 2011	-		0.654	Continuing	Continuing	Continuing
Ancillary Hardware Development	C/CPAF	Various:Various	2.158	0.500	Nov 2010	0.500	Nov 2011	-		0.500	Continuing	Continuing	Continuing
Ship Suitability	WR	NSWC PC:WX	2.467	-		-		-		-	Continuing	Continuing	Continuing
GFE	C/CPAF	Various:Various	4.790	-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPAF	Various:WX	14.434	1.193	Nov 2010	1.146	Nov 2011	-		1.146	0.000	16.773	
Future Mines	C/CPAF	Various:Various	-	-	Nov 2011	-	Nov 2011	-		-	0.000	0.000	
<b>Subtotal</b>			135.462	2.881		2.300		-		2.300			

<b>Support (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Integrated Logistics Support	WR	NSWC PC:WX	0.560	0.012	Oct 2010	0.344	Nov 2011	-		0.344	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.560	0.012		0.344		-		0.344			

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Development Test & Evaluation	WR	NSWC PC:WX	17.916	2.315	Oct 2010	1.034	Nov 2011	-		1.034	0.000	21.265	
<b>Subtotal</b>			17.916	2.315		1.034		-		1.034	0.000	21.265	

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2012 Navy

**DATE:** February 2011

**APPROPRIATION/BUDGET ACTIVITY**

1319: *Research, Development, Test & Evaluation, Navy*  
BA 5: *Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**

PE 0604601N: *Mine Development*

**PROJECT**

0267: *Mine Improvements*

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2012 Navy		<b>DATE:</b> February 2011
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604601N: <i>Mine Development</i>	<b>PROJECT</b> 0267: <i>Mine Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0267</b>				
System Development: Minefield Planning Tactical Decision Aid Improvements: Minefield Planning Tactical Decision Aid Improvements	1	2010	4	2016
System Development: Mine Data Recorder Development: Mine Data Recorder Development	1	2010	4	2016
Test and Evaluation: Quickstrike Mod 3 Aircraft Certification: Quickstrike Mod 3 Aircraft Certification	1	2010	4	2016
Test and Evaluation: Quickstrike Mod 3 Algorithm Development and Testing: Quickstrike Mod 3 Algorithm Development and Testing	1	2010	4	2016
Production Milestones: Mine Data Recorder Production: Mine Data Recorder Production	1	2013	4	2015