

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2005</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE 0604601N, Mine Development					
COST (\$ in Millions)	Prior Years Cost	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Program
Project Cost	172.153	1.470	6.052	15.392	15.738	16.268	5.741	5.923	6.104	Continuing	Continuing
RDT&E Articles Qty	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0

### (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; (3) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields; and (4) Designing and developing the 2010 Mine, which is a replacement for Underwater Mine MK 56 which is designated to be removed from service by the year 2010 due to environmental impact problems. The 2010 Mine design will include provisions for future capability upgrades. Future upgrades may include: (a) 2-way remote command & control of the minefield, (b) precision standoff delivery from aircraft, (c) an enlarged target detection and damage radius, and (d) advanced power systems for the mine.

### (U) B. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2004	FY 2005	FY 2006	FY 2007
FY05 President's Budget	1.480	6.123	15.455	15.675
FY06 President's Budget	1.470	6.052	15.392	15.738
Total Adjustments	-0.010	-0.071	-0.063	0.063
Summary of Adjustments				
FY04 SBIR	-0.006	0.000	0.000	0.000
Congressional Adjustments		-0.054		
Miscellaneous Adjustments	-0.004	-0.017	-0.063	0.063
Subtotal	-0.010	-0.071	-0.063	0.063

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

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Exhibit R-2a, RDTE Project Justification

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME 0267, Mine Development		
<b>(U) C. Accomplishments/Planned Program</b>				
	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.455	4.662	12.717	12.863
RDT&E Articles Quantity				
<p><b><u>Product Development:</u></b> FY 2004 PLANS (\$0.455) System Engineering: Draft requirements for 2010 Mine.</p> <p>FY 2005 PLANS (\$4.130) Hardware Development: Initiate 2010 Mine design and development. (\$0.532) System Engineering: Initiate development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development.</p> <p>FY 2006 PLANS (\$11.290) Hardware Development: Continue 2010 Mine design and development. (\$1.427) System Engineering: Conitnue development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development. Initiate System Development and demonstration.</p> <p>FY 2007 PLANS (\$11.400) Hardware Development: Continue 2010 Mine design and development. (\$1.463) System Engineering: Complete development of Concept of Operations and other tactical analysis modeling and simulation in support of 2010 Mine development. Continue System Development and Demonstration.</p>				

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<b>(U) C. Accomplishments/Planned Program</b>				
	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.873	1.237	1.275	1.475
RDT&E Articles Quantity				
<b>Development Support:</b> FY 2004 PLANS (\$0.823) Software Development: Continue development of target detection algorithms for deisel-electric mini-subs and MCM ships. Continue development of PC-based, MEDAL-compliant TDA for minefield. (\$0.050) Integrated Logistics Support (ILS).  FY 2005 PLANS (\$1.158) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning. (\$0.079) Integrated Logistics Support (ILS).  FY 2006 PLANS (\$1.145) Software Development: Continue development of algorithms (target detection) for mini-subs, HSV/SWATH ships, and MCM ships. Continue development of PC-based, MEDAL-compliant TDAs for minefield planning. (\$0.130) Integrated Logistic Support (ILS).  FY 2007 PLANS (\$1.322) Software Development: Continue development of algorithms (target detection) for mini-subs, HSV/SWATH ships, and MCM ships. Continue development of PC-based, MEDAL-compliant TDAs for minefield planning. (\$0.153) Integrated Logistic Support (ILS).				

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME 0267, Mine Development															
<b>(U) C. Accomplishments/Planned Program</b>  <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th><th style="width: 15%;">FY 06</th><th style="width: 15%;">FY 07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.142</td><td style="text-align: center;">0.153</td><td style="text-align: center;">1.400</td><td style="text-align: center;">1.400</td></tr><tr><td>RDT&amp;E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; min-height: 300px;"><p><b><u>Management:</u></b> FY 2004 PLANS Program Management Support.</p> <p>FY 2005 PLANS Program Management Support.</p> <p>FY 2006 PLANS Program Management Support.</p> <p>FY 2007 PLANS Program Management Support.</p></div>				FY 04	FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	0.142	0.153	1.400	1.400	RDT&E Articles Quantity				
	FY 04	FY 05	FY 06	FY 07													
Accomplishments/Effort/Subtotal Cost	0.142	0.153	1.400	1.400													
RDT&E Articles Quantity																	

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2005</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development			PROJECT NUMBER AND NAME 0267, Mine Development			

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
Line 323100, WPN										
QS Mod 3	3.164	2.969	3.018	3.135	3.254	2.967	2.964	2.901	Continuing	Continuing
2010 Mine Replacement	0.000	0.000	0.000	0.000	0.000	11.281	11.633	12.054	Continuing	Continuing
Total	3.164	2.969	3.018	3.135	3.254	14.248	14.597	14.955	Continuing	Continuing

  

**(U) E. ACQUISITION STRATEGY:**

NSWC PC, Panama City FL is teamed with other Navy activities and various contractors to design and develop the 2010 Mine as a replacement for the Mine MK56. Procurement is scheduled to start in FY09.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2005						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-5			0604601N, Mine Development			0267, Mine Development								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RCP	NWSC-PC	106.622			4.130	12/04	11.290	12/05	11.400	12/06	Continuing	Continuing	N/A
Ancillary Hardware Development			2.158										2.158	N/A
Ship Suitability	WX	NWSC-PC	1.480	0.455	12/03	0.532	12/04	1.427	12/05	1.463	12/06	Continuing	Continuing	N/A
GFE			4.790										4.790	N/A
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Product Development			115.050	0.455		4.662		12.717		12.863		Continuing	Continuing	
Remarks:														
Software Development	WX	Various	4.644	0.823	12/03	1.158	12/04	1.145	12/05	1.322	12/06	Continuing	Continuing	N/A
Integrated Logistics Support	WX	NWSC-PC	0.270	0.050	12/03	0.079	12/04	0.130	12/05	0.153	12/06	Continuing	Continuing	N/A
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
													0.000	
Subtotal Support			4.914	0.873		1.237		1.275		1.475		Continuing	Continuing	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2005</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604601N, Mine Development			PROJECT NUMBER AND NAME 0267, Mine Development								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NWSC-PC	15.833									0.000	15.833	N/A
Operational Test & Evaluation	WX	NWSC-PC, COMOPTEVFOR										0.000	0.000	N/A
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
Subtotal T&E			15.833	0.000		0.000		0.000		0.000		Continuing	Continuing	
Remarks:														
Government Engineering Support			35.599									0.000	35.599	N/A
Program Management Support	Various	Various	0.752	0.137	12/03	0.143	12/04	1.390	12/05	1.390	12/06	Continuing	Continuing	N/A
Travel	PD	NAVSEA	0.005	0.005	12/03	0.010	12/04	0.010	12/05	0.010	12/06	Continuing	Continuing	N/A
												0.000	0.000	
												0.000	0.000	
												0.000	0.000	
Subtotal Management			36.356	0.142		0.153		1.400		1.400		Continuing	Continuing	
Remarks:														
Total Cost			172.153	1.470		6.052		15.392		15.738		Continuing	Continuing	
Remarks:														

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EXHIBIT R-4, Schedule Profile																DATE:				February 2005												
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT								R-1 ITEM NOMENCLATURE																
RDT& E, N/BA-5								0604601N, Mine Development								0267, Mine Development																
E. Schedule Profile																																
MINE DEVELOPMENTS PROGRAM SCHEDULE																																
	FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Events																																
TDA Design/Development																																
TDA Verification/Validation																																
Algorithm Design/Development																																
Algorithm Verification/Validation																																
2010 Mine Analysis of Alternatives																																
2010 Mine Requirements Analysis and Documentation																																
2010 Mine Design/Development																																
2010 Mine Production																																

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**Exhibit R-2a, RDTEN Project Justification**  
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