

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002																											
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE																													
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-4					Surface and Shallow Water Mine Countermeasure/0603502N																													
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																								
Total PE Cost		103.114	140.115	155.016	75.566	59.401	80.681	137.540	CONT.	CONT.																								
Remote Minehunting System/Q0260/Q2387		42.867	58.642	61.452	47.833	20.300	0.000	0.000	CONT.	CONT.																								
Integrated Combat Weapons System/Q1233/Q2388		17.052	14.619	12.758	6.501	6.216	5.703	5.337	CONT.	CONT.																								
Unmanned Underwater Vehicle/Q2094/Q2852		31.529	61.619	76.108	16.421	22.979	54.845	102.961	CONT.	CONT.																								
Shallow Water Mine Countermeasure/Q2131		11.666	5.235	4.698	4.811	9.906	20.133	29.242	CONT.	CONT.																								
Quantity of RDT&E Articles																																		
<p>A. Mission Description and Budget Item Justification: The program provides for developments to combat the threat of known and projected foreign mines against U.S. Naval and merchant shipping in harbors, channels, choke points, sea lines of communications and amphibious and other fleet operating areas. It develops: (1) organic remote minehunting capability for DDG-51 Class and other surface combatants; (2) the integration and improvement of systems and support for systems which will detect, localize and classify moored, bottom, and close-tethered mines for use in Mine Countermeasure (MCM) MCM-1 Class, Mine Hunter Coastal (MHC) MHC-51 Class, and other surface ships; (3) systems for neutralizing mines and light obstacles from shallow water, very shallow water, surf zones, and beach landing craft zones in support of amphibious operations; (4) near-term and long-term Unmanned Undersea Vehicle (UUV) systems for clandestine mine reconnaissance.</p> <p>B. Program Change Summary:</p> <table border="0"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> </tr> </thead> <tbody> <tr> <td>FY 2002 President's Budget:</td> <td>101.984</td> <td>135.284</td> <td>124.519</td> </tr> <tr> <td>Appropriated Value</td> <td>102.929</td> <td>141.384</td> <td></td> </tr> <tr> <td>Adjustments to FY 2001/2002 Appropriated Value/</td> <td></td> <td></td> <td></td> </tr> <tr> <td> FY2002 President's Budget:</td> <td>0.185</td> <td>-1.269</td> <td>30.497</td> </tr> <tr> <td>FY 2003 President's Budget Submit:</td> <td>103.114</td> <td>140.115</td> <td>155.016</td> </tr> </tbody> </table> <p>Funding: FY01: (+0.185M) Other Adjustments. FY02: (-1.249M) Management Reform Initiative; (-.020M) FFRDC. FY03: (-3.600M) Non SQQ-89 RMS termination; (+.663M) OMN re-alignment to RDT&E (UUV); (+5.000M) Sponsor Issue (UUV); (-8.700M) ABS re-structure; (-.195M) Syscom reduction (UUV); (-.528M) contract support; (-.378M) BSO realignment residual issues 64000; (-.945M) PBD 404 Carryover NSWC/NUWC; (-.888M) PBD 604 Nonpay Inflation; (+.068M) rate adjustments; and (+40.000M) PBD-130C Unmanned Underwater Vehicle.</p> <p>Schedule: RMS - Changed to reflect specific T&E Milestones (TECHEVAL Phase I, Phase II & OPEVAL), accurately reflect post-CDR current contract efforts and the preparation & conduct DT/OT.</p> <p>Technical: Not Applicable.</p>												FY 2001	FY 2002	FY 2003	FY 2002 President's Budget:	101.984	135.284	124.519	Appropriated Value	102.929	141.384		Adjustments to FY 2001/2002 Appropriated Value/				FY2002 President's Budget:	0.185	-1.269	30.497	FY 2003 President's Budget Submit:	103.114	140.115	155.016
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Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N/BA-4	Surface & Shallow Water MCM, 0603502N			Remote Minehunting Systems/Q0260/Q2387						
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		42.867	58.642	61.452	47.833	20.300	0.000	0.000	CONT.	CONT.
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: The Remote Minehunting System (RMS), AN/WLD-1(V), program develops a new remotely operated minehunting system for surface ships. This effort includes development and integration of a remote vehicle, mine-hunting sensors, mission command and control, and installation into the DDG-51 Class Flight IIA Baseline 7 and AN/SQQ-89(V)15 Undersea Warfare Combat System.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS</p> <p>Product Development</p> <ul style="list-style-type: none"> - (U) (\$11.824) Primary Hardware Development - Completed Preliminary and Continued Critical Design and fabrication of Engineering Development Models (EDMs) for the RMS. - (U) (\$ 3.800) System Engineering - Continued System Engineering for the RMS EDMs including completion of PDR and continued Critical Design Support. - (U) (\$ 1.230) Award Fees - Incentive Fee for L&R subsystem CDR. <p>Development Support</p> <ul style="list-style-type: none"> - (U) (\$ 4.083) Software Development-Continued software design/Code/Test for the RMS. - (U) (\$ 4.000) Integrated Logistic Support - Continued ILS Planning and IETM Development for RMS. - (U) (\$ 6.400) Ship Integration - Continued Integration Support for the RMS on DDG51 Flight IIA ship including support for AN/SQQ-89(V)15 ECP. <p>Test and Evaluation</p> <ul style="list-style-type: none"> - (U) (\$ 7.500) Developmental Test and Evaluation - Continued RMS Critical Item Testing (CIT). <p>Support</p> <ul style="list-style-type: none"> - (U) (\$3.970) Program Management Support - (U) (\$.060) Travel 										

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-4	Surface & Shallow Water MCM, 0603502N	Remote Minehunting Systems/Q0260/Q2387
<p>2. (U) FY 2002 PLAN Product Development - (U) (\$20.804) Primary Hardware Development - Complete Critical Design and continue fabrication of Engineering Development Models (EDMs) for the RMS. - (U) (\$ 3.900) System Engineering - Continue System Engineering for the RMS EDMs including supporting Critical Design Review. - (U) (\$ 1.809) Award Fees - Incentive Fee for CDR. Development Support - (U) (\$ 5.100) Software Development - Continue software design/Code/Test for the RMS. - (U) (\$ 6.200) Integrated Logistic Support - Continue ILS Planning and IETM Development for RMS. - (U) (\$ 2.200) Ship Integration - Continue Integration Support for the RMS on DDG51 Flight IIA ship including support for AN/SQQ-89(V)15 ECP. Test and Evaluation - (U) (\$ 11.740) Developmental Test and Evaluation - Begin test preparation for DT/OA for the RMS Shipboard Equipment. Support - (U) (\$6.829) Program Management Support - (U) (\$.060) Travel</p> <p>3. (U) FY 2003 PLAN Product Development - (U) (\$36.229) Primary Hardware Development - Complete fabrication of Engineering Development Models (EDMs) for the RMS and begin Pilot Line Proofing of system hardware. - (U) (\$2.600) System Engineering - Continue System Engineering for the RMS EDMs. Development Support - (U) (\$4.000) Software Development - Continue software design/Code/Test for the RMS. - (U) (\$2.200) Integrated Logistic Support - Continue ILS Planning and IETM Development for RMS. - (U) (\$.700) Ship Integration - Continue Integration Support for the RMS on DDG51 Flight IIA ship including support for AN/SQQ-89(V)15 ECP. Test and Evaluation - (U) (\$8.600) Developmental Test and Evaluation - Complete test preparation and conduct DT/OA for the RMS Shipboard Equipment Support. - (U) (\$7.063) Program Management Support - (U) (\$.060) Travel</p>		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Remote Minehunting Systems/Q0260/Q2387
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B. OTHER PROGRAM FUNDING SUMMARY

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	TO COMPLETE	TOTAL COST
(U) OPN RMS Line 262200	0.000	0.000	0.000	0.000	34.563	35.138	94.691	CONT.	CONT.
(U) RDT&E PE 0604373 Q0529	17.625	11.148	16.045	5.536	0.000	0.000	0.000	0.000	50.354

C. Acquisition Strategy: The government has issued a series of contract modifications to Lockheed Martin to complete efforts through the System Design Review. Based upon the approved Milestone II decision the program office issued the contract modification to complete the Critical Design Review (CDR); upon completion of CDR a firm fixed price sole source contract will be awarded to Lockheed Martin to complete the development, fabrication, and testing of the engineering development models, initial pilot line/tooling, and timed phased procurement of initial systems to meet ship delivery schedules. The government has worked with the contractor in an IPT environment to refine the specification and Statement of Work for the overall development effort. The IPT pricing process was used to generate the cost estimates against Navy requirements. The government will pursue commonality between the AN/ AQS-20X airborne minehunting system and the AN/WLD-1(V)1. The AN/WLD-1(V)1 contract plan is for the development of two (2) EDMs, system interactive electronic technical manual (IETM), provisioning data, technical drawings and data, and engineering services.

D. Schedule Profile: See Attached

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DATE:

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APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

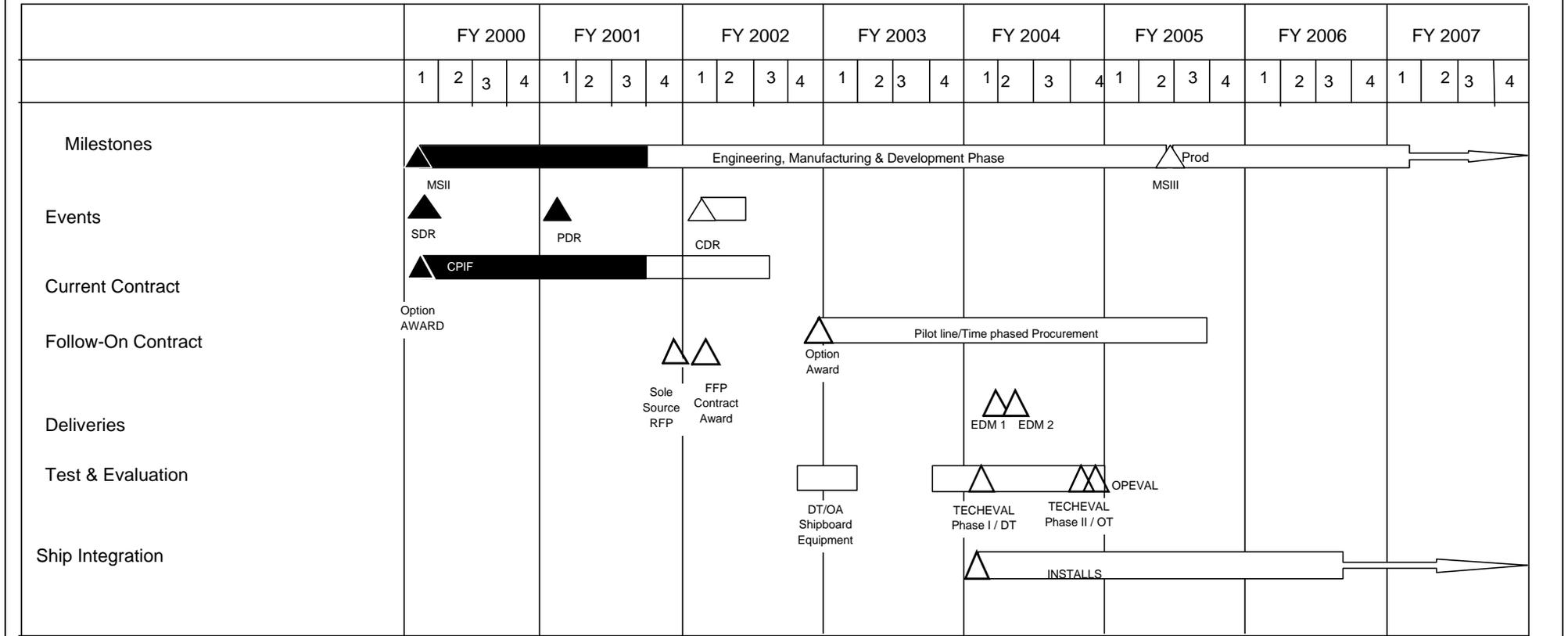
PROJECT NAME AND NUMBER

RDT&E, N/BA-4

Surface & Shallow Water MCM, 0603502N

Remote Minehunting Systems/Q0260/Q2387

AN/WLD-1(V)1 PROGRAM SCHEDULE



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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-4			Surface & Shallow Water MCM, 0603502N			Remote Minehunting System/Q0260/Q2387						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF/IF	Lockheed Martin	131.372	10.324	11/00	7.722	11/01			CONT.	CONT.	N/A
Primary Hardware Development	SS/FFP	Lockheed Martin				11.582	11/01	34.429	11/02	CONT.	CONT.	N/A
Primary Hardware Development	WR	NSWC, CSS	1.100	1.500	12/00	1.500	12/01	1.800	12/02	CONT.	CONT.	
Systems Engineering	C/CPFF/IF	Lockheed Martin	3.900	3.200	11/00	1.440	11/01			CONT.	CONT.	
Systems Engineering	SS/FFP	Lockheed Martin				2.160	11/01	2.300	11/02	CONT.	CONT.	
Systems Engineering	WR	NSWC, CSS	0.200	0.600	12/00	0.300	12/01	0.300	12/02	CONT.	CONT.	
GFE												
Award Fees			6.482	1.230	05/01	1.809	03/02			N/A	N/A	N/A
Subtotal Product Development			143.054	16.854		26.513		38.829				
Remarks: GFE - AN/AQS-20 systems provided to RMS program were funded under PE 0604373/Q0529												
Development Support Equipment												
Software Development	C/CPFF/IF	Lockheed Martin	5.902	3.433	11/00	1.800	11/01			CONT.	CONT.	
Software Development	SS/FFP	Lockheed Martin				2.700	11/01	3.800	11/02	CONT.	CONT.	
Software Development	WR	NSWC, CSS	0.901	0.650	12/00	0.600	12/01	0.200	12/02	CONT.	CONT.	N/A
ILS	C/CPFF/IF	Lockheed Martin	2.800	3.700	11/00	2.360	11/01			CONT.	CONT.	
ILS	SS/FFP	Lockheed Martin				3.540	11/01	2.100	11/02	CONT.	CONT.	
ILS	WR	NSWC, CSS	1.600	0.300	12/00	0.300	12/01	0.100	12/02	CONT.	CONT.	N/A
Ship Integration	C/CPFF	Lockheed Martin	0.200	1.300	11/00	0.440	11/01			CONT.	CONT.	
Ship Integration	SS/FFP	Lockheed Martin				0.660	11/01	0.400	11/02	CONT.	CONT.	
Ship Integration**	Various	Various	9.201	5.100	12/00	1.100	12/01	0.300	12/02	CONT.	CONT.	
Subtotal Support			20.604	14.483		13.500		6.900		CONT.	CONT.	
Remarks: ** Various in Ship Integration provides funding to support AN/SQQ-89(V)15 ECP effort for RMS and PMS400 RMS DDG ship class integration efforts.												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-4			Surface & Shallow Water MCM, 0603502N			Remote Minehunting Systems/ Q0260/Q2387						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF/IF	Lockheed Martin	19.379	6.500	11/00	4.096	11/01			CONT.	CONT.	N/A
Developmental Test & Evaluation	SS/FFP	Lockheed Martin				6.144	11/01	7.200	11/02	CONT.	CONT.	N/A
Developmental Test & Evaluation	WR	NSWC, CSS		1.000	12/00	1.500	12/01	1.400	12/02	CONT.	CONT.	
Tooling												
GFE												
Subtotal T&E			19.379	7.500		11.740		8.600		CONT.	CONT.	
Remarks:												
Contractor Engineering Support	C/CPFF/IF	Lockheed Martin	4.500							0.000	4.500	
Government Engineering Support	WR	NSWC, CSS	34.600							0.000	34.600	N/A
Program Management Support	CPFF	Vredenburg	0.000	1.477	11/00	1.200	11/01	1.150	11/02	CONT.	CONT.	N/A
Program Management Support	Various	Various	5.883	2.493	Various	5.629	Various	5.913	Various	CONT.	CONT.	N/A
Travel	Various	NAVSEA	0.120	0.060	Various	0.060	Various	0.060	Various	CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management			45.103	4.030		6.889		7.123		CONT.	CONT.	
Remarks: Award dates for management are various because multiple activities are receiving tasks at different times during the fiscal year.												
Total Cost			228.140	42.867		58.642		61.452		CONT.	CONT.	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4		PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N			PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		17.052	14.619	12.758	6.501	6.216	5.703	5.337	CONT.	CONT.
RDT&E Articles Qty		3 EDM								

Mission Description and Budget Item Justification: (1) Integrated Combat Weapon System (ICWS) is a series of major, incremental block upgrades to the current combat systems. It provides the MCM/MHC Class Ships an affordable and fully integrated combat weapons system which will improve mission execution efficiency, dramatically reduce life-cycle costs, and facilitate changes to meet future mission requirements. (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 minewarfare planning and evaluation tools and databases to the MCM Commander. (3) Organic MCM C4I connectivity to the rest of the fleet is provided through GCCS-M; design and implement MIW C4I Surveillance and Reconnaissance (C4ISR) architecture to fully integrate and optimize organic and dedicated systems within the Navy's C4ISR architecture; (4) MCS/MCM Ship Studies determine requirements for future surface-airborne mine countermeasures capabilities to meet the Navy's needs in countering sea mines.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS

(U) ICWS Block I

Product Development

- (U) (\$1.062) Primary Hardware Development - Continued hardware design for ICWS. Began EDM fabrication.

- (U) (\$3.500) Primary Hardware Development - Awarded option for fully ruggedized and qualified EDM for Mine Warfare Training Center (MWTC).

Development Support Equipment

- (U) (\$4.269) Software Development - Continued software design/code/test for ICWS. Conducted CDR and begin subsystem integration and test.

Support

- (U) (\$.670) Support - Program management support

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<p>1. (U) FY 2001 ACCOMPLISHMENTS Continued (U) MEDAL Development Support Equipment - (U) (\$.750) Software Development - Configural minefield planning TDA - (U) (\$1.514) Software Development - Continued MEDAL software port to NT, and begin integration and testing on Build 8. Initiate development of Build 9. - (U) (\$.900) Software Development - Tactical Decision Aid (TDA) study Support - (U) (\$.256) Program Management Support</p> <p>(U) ORGANIC MCM C4I Product Development - (U) (\$2.975) System Engineering - Continued MUW C4ISR architecture/data requirements. Continue MUW data content standards characterization. Continue MOD/SIM effort. Support - (U) (\$.387) Program Management Support</p> <p>(U) MCS/MCM SHIP STUDIES Product Development - (U) (\$.428) System Engineering - Completed study of alternatives to replace or retain MCS-12 (USS INCHON). - (U) (\$.252) System Engineering - Completed study of alternatives for follow-on class of surface mine countermeasures ships. Support - (U) (\$.089) Program Management Support</p> <p>2. (U) FY 2002 PLANS (U) ICWS Block I Product Development - (U) (\$1.794) Primary Hardware Development - Continue hardware design for ICWS Development Support Equipment - (U) (\$5.294) Software Development - Complete software design/code/test for ICWS, complete subsystem integration and testing, and begin EDM 1 integration and testing. Support - (U) (\$1.425) Program management support</p>		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	February 2002 PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388
2. (U) FY 2002 PLANS continued		
(U) MEDAL Development Support Equipment - (U) (\$2.031) Software Development - Complete Build 8. Complete development of Build 9 and initiate integration and testing. Initiate the development of Build 10. Support - (U) (\$.344) Program Management Support		
(U) ORGANIC MCM C4I Product Development - (U) (\$3.192) System Engineering - Complete MUW data content standards characterization. Complete MUW C4ISR architecture/data requirements. Continue MOD/SIM effort. Initiate and implement Phase 1 of the design of MUW Network Centric Warfare database and support network. Initiate and complete MEDAL/TEDS integration, MUW network centric warfare collaborative planning tools, and MCM/MHC classified LAN integration design. Initiate organic/dedicated MUW tactics development. Begin planning and evaluation models/algorithms. Update C4I SR assessment plan. Support - (U) (\$5.539) Program Management Support		
2. (U) FY 2003 PLAN (U) ICWS Block I Product Development - (U) (\$.717) Primary Hardware Development - Complete hardware design for ICWS Development Support Equipment - (U) (\$5.039) Software Development - Complete EDM 1 integration and testing. Perform EDM 2 ship installation, training, integration, and testing. Begin EDM 3 schoolhouse integration and testing. Conduct TRR. Support - (U) (\$1.176) Program management support		
(U) MEDAL Development Support Equipment - (U) (\$2.228) Software Development - Complete integration and testing of Build 9. Complete the development of Build 10. Support - (U) (\$.428) Program Management Support		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388																									
<p>3. (U) FY 2003 PLANS Continued</p> <p>(U) ORGANIC MCM C4I Product Development - (U) (\$1.882) System Engineering - Continue MOD/SIM effort. Continue organic/dedicated MUW tactics development. Initiate the development of thru sensor technology. Continue planning and evaluation of models/algorithms. Update C4ISR assessment plan. Initiate advanced MUW TDA development. Development Support Equipment - (U) (\$.800) Software Development - Complete the development of phase 1 MUW Network Centric Warfare database and support network. Support - (U) (\$.488) Program Management Support</p> <p>B. OTHER PROGRAM FUNDING SUMMARY</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:25%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) OPN (ICWS) Line 262200</td> <td style="text-align: center;">5.437</td> <td style="text-align: center;">2.505</td> <td style="text-align: center;">1.425</td> <td style="text-align: center;">8.222</td> <td style="text-align: center;">10.151</td> <td style="text-align: center;">33.374</td> <td style="text-align: center;">46.753</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. ACQUISITION STRATEGY</p> <p>ICWS is a series of major incremental upgrades to the current systems. The original equipment manufacturers have teamed with the Navy to develop the changes. FY 00 through FY 03 tasks will be accomplished under Cost Plus Incentive Fee (CPIF) contract. Contract was awarded in FY00. MEDAL is an evolutionary program with a development cycle of one year per software build to coincide with GCCS-M build schedule.</p> <p>D. SCHEDULE PROFILE</p> <p>See attached</p>									<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	(U) OPN (ICWS) Line 262200	5.437	2.505	1.425	8.222	10.151	33.374	46.753	CONT.	CONT.
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																		
(U) OPN (ICWS) Line 262200	5.437	2.505	1.425	8.222	10.151	33.374	46.753	CONT.	CONT.																		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388

ICWS BLOCK 1 PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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	1	2	3	4
Events	▲ SDR ▲ PDR ▲ CDR												△ TRR																			
	Software Req/Design/code/test																															
					△ Subsystem Integration and Test																											
									△ EDM 1 Integration and Test																							
													△ EDM 2 Integration and Test																			
													△ Ship Install/Checkout																			
													△ Crew Training EDM 2																			
													△ Ship board test Dockside/at-sea																			
													△ EDM 3 School house Integration and Test																			
									EDM 1&2 final Acceptance								△ Ready for Training															
Contract	▲ E&MD AWARD				▲ EDM OPTION AWARD												△ Production															
																	PRODUCTION AWARD															

R-1 SHOPPING LIST - Item No. 49

Exhibit R-2a, RDT&E Project Justification
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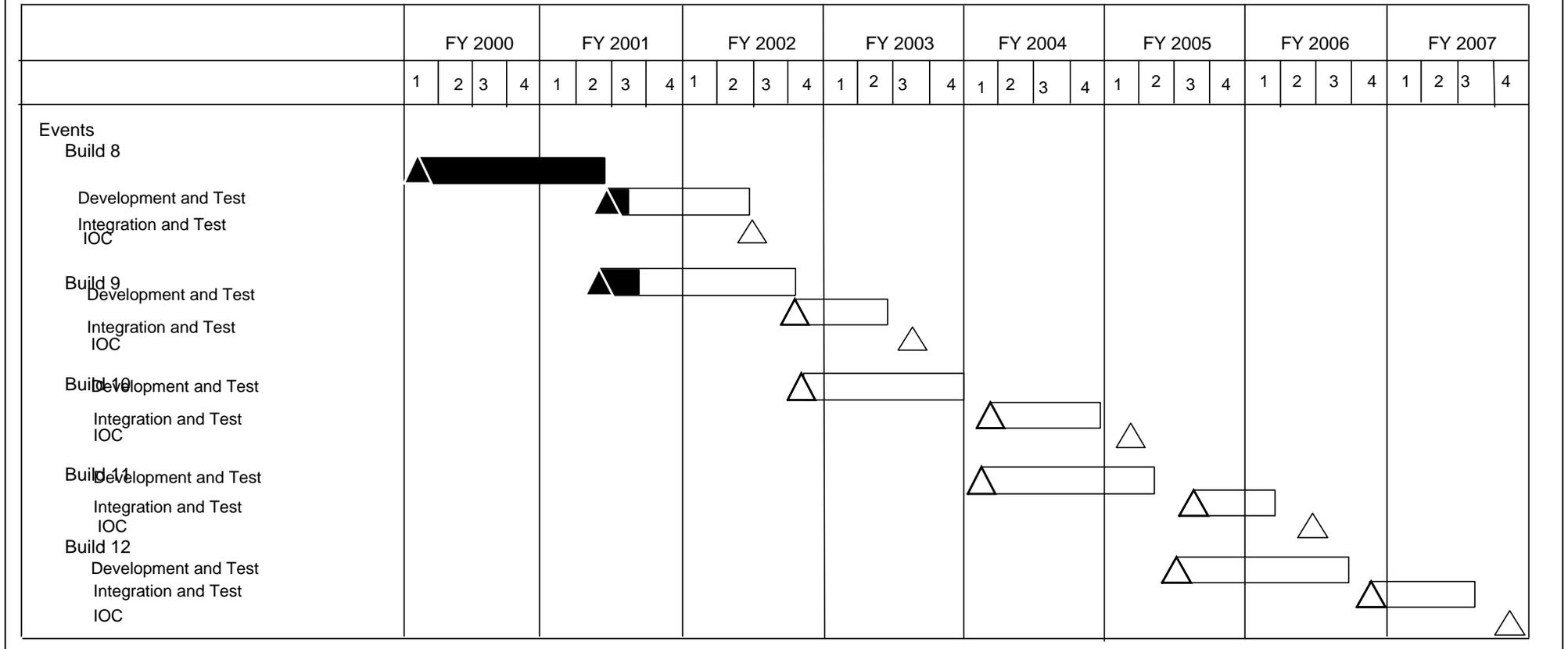
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388

MEDAL PROGRAM SCHEDULE



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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388

MUW C4ISR PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007							
	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	1	2	3	4				
Events																																				
MUW Information System Engineering effort. Modeling and Simulation	█																																			
MUW Data Content Standards Effort	█				▢																															
C4ISR Architecture Development	█				▢																															
MEDAL/TEDS Integration									▢																											
Advanced MUW Tactical Decision Aid Development													▢				Multi build design/test/deploy																			
MUW Network Centric Warfare Database									▢				▢																							
									▢				▢				Implementation Ph I																			
																	▢				Implementation Ph															
																					▢				Database Maintenance/Update/Redesign											
																									▢				Shorebased Network							
MUW Network Centric Warfare Info System Network																																				
MUW Network Centric Warfare Collaborative Planning Tool Design									▢																											

R-1 SHOPPING LIST - Item No. 49

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 14 of 32)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Integrated Combat Weapons System/Q1233/Q2388

MUW C4ISR PROGRAM SCHEDULE CONT'D

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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	1	2	3	4
Events cont'd																																
Organic/Dedicated MUW Tactics Development									△																							
Planning & Evaluation Models/Algorithms									△																							
MCM/MHC Classified LAN Integration Design									△																							
Develop TEDS/PBU Thru Sensor Technology													△																			
C4ISR Assessment Plan Update									△																							

R-1 SHOPPING LIST - Item No. 49

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 15 of 32)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-4			Surface & Shallow Water MCM/0603502N			Integrated Combat Weapons System/Q1233/Q2388						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPIF	Raytheon, RI	2.960							0.000	2.960	N/A
Primary Hardware Development	SS/FFP	Lockheed / Raytheon, RI		2.690	11/00	0.794	11/01			CONT.	CONT.	N/A
Primary Hardware Development	WR/RCP	NSWC, CSS		1.872	11/00	1.000	11/01	0.717	11/02			
Systems Engineering	Various	NSWC, CSS/NAVAIR	4.250	3.655	11/00	3.192	11/01	1.882	11/02	CONT.	CONT.	N/A
Tooling												
GFE												
Award Fees	SS/CPIF	Raytheon, RI	0.439							CONT.	CONT.	
Subtotal Product Development			7.649	8.217		4.986		2.599		CONT.	CONT.	
Remarks: Due to a large projected cost overrun on ICWS, all work contracted to Raytheon on the CPIF contract was transferred to Lockheed Martin FP contract and NSWC, CSS Panama City, Florida.												
Development Support Equipment												
Software Development	SS/CPIF	Raytheon, RI	10.533							CONT.	CONT.	
Software Development	SS/FFP	Lockheed / Raytheon, RI		2.880	11/00	2.359	11/01	2.000	11/02	CONT.	CONT.	
Software Development	WR_PD	NSWC/CD,ARL/UT,ONR	8.333	4.553	11/00	2.935	11/01	3.839	11/02	CONT.	CONT.	
Software Development	SS/FFP	SAIC				2.031	11/01	2.228	11/02	CONT.	CONT.	
Technical Data			0.100									
Subtotal Support			18.966	7.433		7.325		8.067		CONT.	CONT.	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-4			Surface & Shallow Water MCM/0603502N				Integrated Combat Weapons System/Q1233/Q2388					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.200								0.200	N/A
Operational Test & Evaluation			1.592								1.592	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			1.792	0.000		0.000		0.000		0.000	1.792	
Remarks:												
Contractor Engineering Support			0.153								0.000	
Government Engineering Support			0.500								0.000	
Program Management Support	VAR	NAVSEA	1.310	1.402	11/00	2.308	11/01	2.092	11/02	Cont.	CONT.	N/A
Travel			0.100								0.100	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			2.063	1.402		2.308		2.092		Cont.	CONT.	
Remarks:												
Total Cost			30.470	17.052		14.619		12.758				
Remarks:												

R-1 SHOPPING LIST - Item No. 49

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 32)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N			PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131						
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		11.666	5.235	4.698	4.811	9.906	20.133	29.242	CONT.	CONT.
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: This program provides for a combination of joint US Marine Corps and US Navy projects planned to counter the threat to amphibious landing forces from known and projected foreign land and sea mines and light obstacles in the beach zone and surf zone approaches to amphibious assault areas. It develops systems for explosive mine clearance. Included are the Distributed Explosives Technology (DET), Shallow Water Assault Breach System (SABRE), incremental enhancements to assault breaching mission (lane marking, obstacle breaching, and launch control safety), and follow-on Far Term efforts.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131

1. (U) FY 2001 ACCOMPLISHMENTS

(U) SABRE

Support

- (U) (\$ 1.026) Government Engineering Support - Program terminated. Funds required for disposition of hazardous and explosive material.

(U) DET

-Product Development

- (U) (\$.024) Primary Hardware Development - Complete DET system development.

Development Support

- (U) (\$.150) Integrated Logistic Support - Training development and support.
- (U) (\$.020) Configuration Management - Complete Technical Data Package (TDP).

Test and Evaluation

- (U) (\$.443) Operational Test and Evaluation - Complete OT testing.

Support

- (U) (\$.730) Government Engineering Support - Complete DET development, and provide TDA engineering.
- (U) (\$.274) Program Management Support
- (U) (\$.025) Travel

(U) ABS Incremental Enhancements

Product Development

- (U) (\$1.200) Primary Hardware Development - Develop incremental enhancements to support ABS mission including lane marking, obstacle breaching and launch control safety.
- (U) (\$.100) Systems Engineering - Support incremental enhancements

Development Support

- (U) (\$.100) Integrated Logistic Support - Support incremental enhancements
- (U) (\$.075) Configuration Management - Support TDP for incremental enhancements.
- (U) (\$.063) Technical Data - Prepare TDP to support incremental enhancements.

Support

- (U) (\$.800) Government Engineering Support - Design Agent (DA) engineering support.

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Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 19 of 32)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	February 2002 PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131
<p>1. (U) FY 2001 ACCOMPLISHMENTS continued (U) Far term System Development Product Development - (U) (\$.925) Primary Hardware Development - Risk reduction and preparation for far term - (U) (\$.540) Systems Engineering - Far term preparation - (U) (\$.225) Government Furnished Equipment - Mine threat procurement for far term development. Development Support - (U) (\$.100) Integrated Logistic Support - Risk reduction and far term system preparation - (U) (\$.100) Configuration Management - Support far term system development - (U) (\$.200) Technical Data - Support far term system development Support - (U) (\$3.888) Government Engineering Support - TDA/DA engineering support. - (U) (\$.633) Program Management Support - (U) (\$.025) Travel</p> <p>2. (U) FY 2002 PLANS (U) Far term System Development Product Development - (U) (\$.606) Primary Hardware Development - COBRA development to include surf zone - (U) (\$.593) Systems Engineering - Far term preparation - (U) (\$.200) Government Furnished Equipment - Mine threat procurement for far term development. Test and Evaluation - (U) (\$.576) Developmental Test & Evaluation - Far term contract options to support demonstration tests. Support - (U) (\$2.046) Government Engineering Support - TDA/DA engineering support. - (U) (\$.739) Program Management Support - (U) (\$.400) Contractor Engineering Support - (U) (\$.075) Travel</p>		

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Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	February 2002
PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131		
<p>3. (U) FY 2003 PLANS (U) Far term System Development Product Development - (U) (\$0.725) Systems Engineering - Development of government analysis tools to evaluate the performance of concepts being developed for the far term systems. - (U) (\$0.500) Government Furnished Equipment - Mine threat procurement for far term development. Test and Evaluation - (U) (\$1.682) Developmental Test & Evaluation - Far term contract options to support demonstration tests. Support - (U) (\$.817) Government Engineering Support - TDA/DA engineering support. Conduct AoA on far term concepts. Prepare for transition / MS A of far term concept(s). - (U) (\$0.699) Program Management Support - (U) (\$0.200) Contractor Engineering Support - (U) (\$0.075) Travel</p>		

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Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N			PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131					
B. OTHER PROGRAM FUNDING SUMMARY									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>TO COMPLETE</u>	<u>TOTAL COST</u>
(U) OPN (SWMCM Line 262400 (Reflects cancellation of DET/SABRE)	16.248	0.000	0.000	0.000	0.000	0.000	0.000	0	20.712
C. Acquisition Strategy: The planned tasks for FY 01,02,03, and 04 will be accomplished to support the AOA "in an effort" to reduce cost and schedule risk associated with integrating unique mine kill mechanisms into conventional weapons systems.									
D. Schedule Profile									
See attached									

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131	

DET PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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	1	2	3	4
Milestones	E&MD																															
Test & Evaluation	DT-IIB/OT-IIA SYSTEM TECHEVAL				OT-IIB (OA)																											
Demil & Disposal																																

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Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131

SABRE PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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	1	2	3	4
Events																																
Test & Evaluation																																
Demil & Disposal																																

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Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4	PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N	PROJECT NAME AND NUMBER Assault Breaching Systems/Q2131

ABS FAR-TERM PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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	1	2	3	4
Surf Zone (SZ) Near term Events					Mid-term incremental Enhancements																											
Surf Zone (SZ) Far term Milestones Mine Countermeasure (MCM) System																																
Counter Obstacle (CO) System																																
Events									MAA				MCM Demo				AOA				Obstacle Demo											
									Technology Development																							
																					MCM System Development								CO System Development			
CO System Development Contract																																
CO System																																

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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-4			Surface & Shallow Water MCM/0603502N			Assault Breaching Systems/Q2131						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	IH, CSS, TBD	52.405	2.149	11/00	0.606	11/01	0.000	12/02	CONT.	CONT.	N/A
Ancillary Hardware Development	WR	IH, CSS, TBD	8.100	0.000		0.000				0.000	8.100	N/A
Systems Engineering	WR	IH, CSS	15.000	0.640	11/00	0.593	11/01	0.725	11/02	CONT.	CONT.	N/A
Licenses	WR	N/A	0.800	0.000		0.000				0.000	0.800	N/A
Tooling	WR	IH, CSS, TBD	0.860	0.000		0.000				0.000	0.860	N/A
GFE	WR	IH, CSS	3.225	0.225	06/01	0.200	06/02	0.500	06/03	CONT.	CONT.	N/A
Award Fees	N/A	N/A	0.500	0.000		0.000				0.000	0.500	
Subtotal Product Development			80.890	3.014		1.399		1.225		CONT.	CONT.	
Remarks:												
Development Support Equipment	WR	IH, CSS, TBD	11.721	0.000						CONT.	CONT.	N/A
Software Development	WR	CSS	8.037	0.000						CONT.	CONT.	N/A
Training Development	WR	IH, CSS	2.000	0.000						CONT.	CONT.	N/A
Integrated Logistics Support	WR	IH, CSS	2.362	0.350	11/00					CONT.	CONT.	N/A
Configuration Management	WR	IH, CSS	3.549	0.195	11/00					CONT.	CONT.	N/A
Technical Data	WR	IH, CSS	2.325	0.263	11/00					CONT.	CONT.	N/A
GFE	WR	IH, CSS	0.400	0.000						CONT.	CONT.	N/A
Subtotal Support			30.394	0.808		0.000		0.000		CONT.	CONT.	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 26 of 32)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-4			Surface & Shallow Water MCM/0603502N			Assault Breaching Systems/Q2131						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR, PD	IH, CSS, ONR, TBD	22.940	0.000		0.576	01/02	1.682	12/02	CONT.	CONT.	N/A
Operational Test & Evaluation	WR	IH, CSS, TBD	8.212	0.443	11/00	0.000				0.000	0.443	N/A
Tooling	WR	IH, CSS, TBD	0.700	0.000		0.000				0.000	0.700	N/A
GFE	WR	IH, CSS, TBD	0.400	0.000		0.000				0.000	0.400	N/A
Subtotal T&E			32.252	0.443		0.576		1.682		CONT.	CONT.	
Remarks:												
Contractor Engineering Support	Contract	Vredenburg	2.279	0.000		0.400	11/01	0.200	11/02	CONT.	CONT.	N/A
Government Engineering Support	WR	IH, CSS	9.960	6.444	11/00	2.046	11/01	0.817	11/02	CONT.	CONT.	N/A
Program Management Support	WR	IH, CSS, NAVSEA	9.747	0.907	11/00	0.739	11/01	0.699	11/02	CONT.	CONT.	N/A
Travel	PD	NAVSEA	0.750	0.050	11/00	0.075	11/01	0.075	11/02	CONT.	CONT.	N/A
Labor (Research Personnel)	N/A	N/A									0.000	
Overhead	N/A	N/A									0.000	
Subtotal Management			22.736	7.401		3.260		1.791		CONT.	CONT.	
Remarks:												
Total Cost			166.272	11.666		5.235		4.698				
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 27 of 32)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4		PROGRAM ELEMENT NAME AND NUMBER Surface & Shallow Water MCM, 0603502N			PROJECT NAME AND NUMBER Unmanned Undersea Vehicle Q2094/Q2852					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		31.529	61.619	76.108	16.421	22.979	54.845	102.961	CONT.	CONT.
RDT&E Articles Qty						1 - LMRS				

A. Mission Description and Budget Item Justification:

This project was completely restructured in FY 1994 in response to Congressional direction provided in the FY 1994 DOD Appropriations Act. Specifically, the office of the Secretary of Defense and the Navy were directed to (1) establish priorities among various proposed UUV programs, (2) focus on near-term mine countermeasures issues, and (3) establish affordable, cost-effective programs. The Navy developed an overall UUV Program Plan, which was approved by ASN(RD&A) June 1994, endorsed by USD(A&T) and forwarded to Congress to support FY 1995 budget deliberations.

The UUV Program Plan establishes a clandestine, near-term mine reconnaissance capability as the Navy's top UUV priority; a long term-mine reconnaissance system as priority two; the conduct of surveillance, intelligence and tactical oceanography missions as priority three; and exploring advanced UUV designs for the future as priority four. FY 1995 Congressional language complimented the Navy Plan and fully supported priorities one and two starting in FY 1995.

The UUV project funds development of the first three priorities of the UUV Program Plan. The Near-Term Mine Reconnaissance System (NMRS) is a minehunting UUV system launched and recovered from an SSN-688 class submarine capable of mine detection, classification, and localization. One NMRS Operational Prototype (OP) system was made available to the Commander Submarine Development Squadron-Five in FY 1999. No further production of the NMRS is planned. The AN/BLQ-11 Long-Term Mine Reconnaissance System (LMRS) is being developed to provide a robust, long-term Fleet capability to conduct clandestine minefield reconnaissance. A quantity of 6-12 LMRSs will be procured beginning in FY05. Eight LMRSs have been funded through POM 02. The Navy's third priority is the conduct of surveillance, intelligence and tactical oceanography. To meet this requirement the Navy will develop a Mission Reconfigurable UUV (MRUUV) system that is capable of performing different missions. It is envisioned that this system will adapt elements of the LRMS design to develop a more modular UUV capable of accomodating multiple payload sensors appropriate to meet various mission requirements. ONR will develop technologies for payload sensors and increased autonomy under the Autonomous Operations Future Naval Capability (FNC) programs to support risk mitigation for the MRUUV program. The Autonomous Operations FNC will demonstrate a Maritime Reconnaissance system in FY04 and an Undersea Search and Survey/Communication Navigation Aid system in FY05. Technologies from these systems will transition to MRUUV during demonstration year.

Congress appropriated \$1.5M in FY01 and \$6.1M in FY02 for an Unmanned Underwater Vehicle (UUV) Center of Excellence at NUWC DIVKPT. Funds are being used to develop a program plan to define current and future UUV testing requirements.

The Long-Term Mine Reconnaissance System (LMRS) is currently in development. The fabrication of a prototype system will begin in FY02. This prototype system will support test and evaluation, and will transition to fleet operations in FY05.

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EXHIBIT R-2a, RDT&E Project Justification								February 2002	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA-4	Surface & Shallow Water MCM, 0603502N				Unmanned Undersea Vehicle Q2094/Q2852				
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:									
1. (U) FY 2001 ACCOMPLISHMENTS:									
- (U) (25.643) (LMRS): Continued development phase of prototype system. Completed Final System CDR.									
- (U) (1.486) (UUV COE:): Developed a program to define current and future UUV test requirements.									
- (U) (4.400) (SAS:): Developed technology for slow speed Synthetic Aperture Sonar for UUVs.									
2. (U) FY 2002 PLAN:									
(U) (51.473) (LMRS): Continue development phase and begin fabrication of prototype system.									
(U) (2.100) (MRUUV): Analysis Of Alternatives for MRUUV									
(U) (1.000) UUV P3I Engineering Studies/Prototype Design									
(U) (1.000) UUV Master Plan									
(U) (6.046) (UUV COE:): Continue development of plans for UUV test center.									
3. (U) FY 2003 PLAN:									
(U) (36.608) (LMRS): Continue development phase and complete fabrication of prototype system. Start prototype testing.									
(U) (25.300) (MRUUV): Acquisition Planning and specification development.									
(U) (14.200) (UUV P3I): Continue Engineering Studies/Prototype Design									
B. Other Program Funding Summary: (\$ in Millions)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN PE 0204281N; Line Item 217100	0.000	0.000	0.000	52.410	48.131	49.024	60.683	CONT.	CONT.
O&MN PE 0204281N; 12B6 (LMRS)	0.000	0.000	0.000	5.340	5.990	6.177	6.317	CONT.	CONT.
C. Acquisition Strategy: The LMRS acquisition strategy is structured to maximize competition during system development. In FY97 three one year contracts were awarded for development of preliminary design. In early FY98, two of the preliminary design contractors were selected to continue development through a critical design review. Selection of these two contractors was based primarily on the contractor's performance during the preliminary design contract. In early FY00, Boeing was selected to complete the LMRS design, fabricate a prototype system and support in-water testing. Procurement of the LMRS will be sole source to Boeing. A competitive procurement is not cost effective due to the limited (6-12) number of systems planned for procurement. The Program Sponsor (N773) has committed to reallocating a portion of the OPN (\$45.0M) and O&MN (\$5.4M) to RDT&E in FY04. The additional RDT&E funds will be used for continuation of LMRS baseline development, fabrication of the SAS/LPUMA Engineering Development Model (EDM), and acceleration of MRUUV. \$7.4M of FY04 OPN funds will be used to fund procurement of long lead material for FY05 LMRS production. In addition, a portion of the FY05 OPN and O&MN dollars will be reallocated to RDT&E to complete the LMRS baseline and maintain the accelerated MRUUV program. PBD 130C added \$40M to FY03 to accelerate the development of more advanced UUVs. Funding will be used to accelerate the development of Synthetic Aperture Sonar (SAS), LMRS Precision Underwater Mapping (L-PUMA), and Mission Reconfigurable UUV (MRUUV) to address multiple missions. The MRUUV project will conduct an AOA in FY02 and commence acquisition planning and specification development in FY03. Procurement and operations not planned within the FYDP.									

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/BA-4

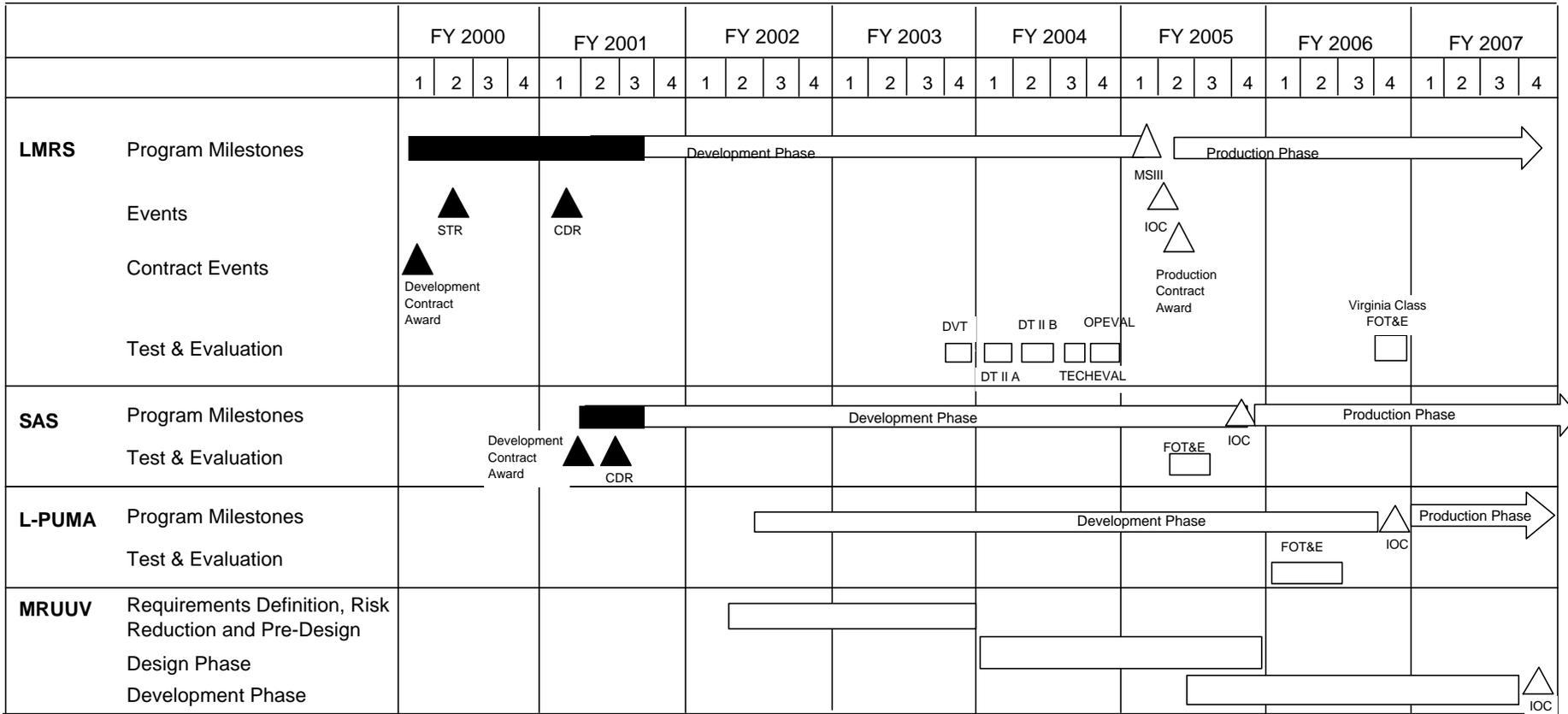
PROGRAM ELEMENT NAME AND NUMBER

Surface & Shallow Water MCM, 0603502N

PROJECT NAME AND NUMBER

Unmanned Undersea Vehicle Q2094/Q2852

UUV PROGRAM SCHEDULE



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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis									DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER						PROJECT NAME AND NUMBER				
RDT&E, NAVY/BA-4			Surface and Shallow Water Mine Countermeasures Program Element (PE) 0603502N						Unmanned undersea Vehicle Q2094/Q2852				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development (LMRS) Design Contracts	FFP/ CPAF	NGC, Boeing and Lockheed Martin	29.984	0.053								30.878	
Award Fees (LMRS Design)			0.841										
Primary Hardware Development (LMRS) Development Contract	CPAF/IF	Boeing	23.967	19.131	N/A	37.561	N/A	26.929	N/A	Cont	Cont	Cont	
Award fees (LMRS Development)			0.517	1.191		1.799		3.076		Cont	Cont	Cont	
EAC Incentive Fee (LMRS Development)				0.060		0.600		0.420		Cont	Cont	Cont	
AUPC Incentive Fee (LMRS Development)													
Engineering Services			0.164	0.000		0.100		0.470		Cont	Cont	Cont	
MRUUV Development						2.100		25.300					
P31				4.400		1.000		14.200					
UUV Master Plan						1.000							
UUV Center of Excellence				1.486		6.046							
GFE													
Subtotal Product Development			55.473	26.321		50.206		70.395		Cont	Cont	Cont	
Development Support Equipment			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Software Development			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Training Development			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Integrated Logistics Support			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Configuration Management			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Technical Data			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
GFE			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Subtotal Support			0.000	0.000		0.000		0.000		Cont	Cont	Cont	
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER					PROJECT NAME AND NUMBER				
RDT&E, NAVY/BA-4			Surface and Shallow Water Mine Countermeasures Program Element (PE) 0603502N					Unmanned undersea Vehicle Q2094/Q2852				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NUWC		0.798		1.398		0.585		Cont	Cont	Cont
Operational Test & Evaluation	WR	NUWC						0.065		Cont	Cont	Cont
GFE	WR	NUWC	0.032	0.007						Cont	Cont	Cont
Govt Facilities Cost (LMRS Develop)	WR	NUWC, NSWC	2.178	0.861		0.241		0.775		Cont	Cont	Cont
Subtotal T&E			2.210	1.666		1.639		1.425		Cont	Cont	Cont
Remarks:												
Contractor Engineering Support	FFP	JHU/APL, ARL/UT	3.469	0.055		0.550		0.050		Cont	Cont	Cont
Government Engineering Support	WR	NUWC, NSWC	10.279	2.457		4.526		2.105		Cont	Cont	Cont
Program Management Support	Various	RPI, Vred, Stanley, KPMG	2.771	0.610		0.539		0.397		Cont	Cont	Cont
		ONR				2.706		1.221		Cont	Cont	Cont
		Other	0.536	0.317		1.353		0.415		Cont	Cont	Cont
Travel			0.216	0.103		0.100		0.100		Cont	Cont	Cont
Subtotal Management			17.271	3.542		9.774		4.288		Cont	Cont	Cont
Remarks:												
Total Cost			74.954	31.529		61.619		76.108		Cont	Cont	Cont
Remarks:												

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Exhibit R-3, Project Cost Analysis
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