

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-05</b>						R-1 ITEM NOMENCLATURE 0604261N Acoustic Search Sensors					
COST (\$ in Millions)	Prior Years Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost			19.022	16.676	13.929	16.332	18.000	18.262	10.240	Continuing	Continuing
H0480 ASW SENSORS & PROCESSING			19.022	16.676	13.929	16.332	18.000	18.262	10.240	Continuing	Continuing
Quantity of RDT&E Articles	202		1		100						303
<p>(U) (H0480) – The ASW Sensors and Processing project provides the tools and methods necessary to maintain maritime superiority by preventing hostile submarines from disrupting the US Navy's ability to maintain naval superiority, control the sea lines of communication, and carry out their missions. This project encompasses the System Development and Demonstration (SDD) of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) cueing, search, localization, and attack. Smaller and quieter threat submarines drive the requirement for continued advancement in ASW sensor capabilities for both blue water and littoral environments. The littoral regions of the world create an additional ASW challenge to defeat the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project H0480 provides funding for the engineering development of solutions that acquire, confirm, and attack threat submarines. Efforts being funded during the period identified are the Generic Acoustic Stimulation System (GASS), multi-static active sensor systems (including Advanced Extended Echo Ranging (AEER)), and the Hydrostatic Sensor Firing Device (HSFD). GASS provides ocean, sensor, and target modeling that will couple with all ASW trainers and add shallow water and range dependent capabilities; multi-static active sensor systems provides improved threat target detection capabilities for harsh water environments; and HSFD provides an ASW depth bomb capability. Future efforts include Non-Traditional Acoustic Processing , Tactical Acoustic Measurement, Shallow Water Localization and Attack, and Light Weight Search System.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING &amp; MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

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Exhibit R-2, RDTEN Budget Item Justification  
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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2002</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors				PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing					
COST (\$ in Millions)		Prior Years Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			19.022	16.676	13.929	16.332	18.000	18.262	10.240	Continuing	Continuing
RDT&E Articles Qty	AEER	200			100						300
RDT&E Articles Qty	GASS	2	1								3
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ASW Sensors and Processing project provides the tools and methods necessary to maintain maritime superiority by preventing hostile submarines from disrupting the US Navy's ability to maintain naval superiority, control the sea lines of communication, and carry out their missions. This project encompasses the System Development and Demonstration (SDD) of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) cueing, search, localization, and attack. Smaller and quieter threat submarines drive the requirement for continued advancement in ASW sensor capabilities for both blue water and littoral environments. The littoral regions of the world create an additional ASW challenge to defeat the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project H0480 provides funding for the engineering development of solutions that acquire, confirm, and attack threat submarines. Efforts being funded during the period identified are the Generic Acoustic Stimulation System (GASS), multi-static active sensor systems (including Advanced Extended Echo Ranging (AEER)), and the Hydrostatic Sensor Firing Device (HSFD). GASS provides ocean, sensor, and target modeling that will couple with all ASW trainers and add shallow water and range dependent capabilities; multi-static active sensor systems provides improved threat target detection capabilities for harsh water environments; and HSFD provides an ASW depth bomb capability. Future efforts include Non-Traditional Acoustic Processing, Tactical Acoustic Measurement, Shallow Water Localization and Attack, and Light Weight Search System.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <p>(U) GASS</p> <ul style="list-style-type: none"> <li>-(U) (\$ 8.300) EMD contractor completed code and test for the major Complete Computer Software Configuration Items (CSCIs), initiated/completed Preliminary Design Review (PDR) for Gass Interface Module(GIM) #3 and #4, Critical Design Review (CDR) for GIM #2 and #3, completed GIM #1 in house test and initiated field installation and test, initiated/completed fabrication of GASS units #3 and #4.</li> <li>-(U) (\$ .382) Continued GFE environmental software improvements.</li> <li>-(U) (\$ .937) Provided engineering support to EMD contract.</li> <li>-(U) (\$ .366) Provided other engineering support and contractor support services.</li> </ul>											

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**Exhibit R-2a, RDTE Project Justification**  
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-05</b>	0604261N Acoustic Search Sensors	H0480 ASW Sensors & Processing
<p>(U) AEER</p> <ul style="list-style-type: none"><li>-(U) (\$ 1.500) Completed software and integration test, completed DT/OT for the non-coherent source enhancement.</li><li>-(U) (\$ 3.115) Completed AEER source system design trade offs, systems analysis, initiated/completed Analysis of Alternative (AOA) and Milestone II.</li><li>-(U) (\$ 3.000) Initiated AEER source acoustic processing software in the P-3C.</li><li>-(U) (\$ .586) Provided other engineering support and contractor support services.</li><li>-(U) (\$ .836) Initiated Hydrostatic Device system design and trade offs.</li></ul> <p>3. FY 2002 PLAN:</p> <p>(U) GASS</p> <ul style="list-style-type: none"><li>-(U) (\$ 6.200) EMD contractor complete and deliver (ready for training) GIM #1 and GIM #2, perform Test Readiness Review (TRR) for on-site testing. CDR for GIM#3. Conduct test/integration for GIMs #2 &amp; #3. CDR for GIM #4. Initiate/complete MS III.</li><li>-(U) (\$ .340) Continue GFE environmental software improvements.</li><li>-(U) (\$ .729) Provide engineering support to EMD contract.</li><li>-(U) (\$ .737) Provide other engineering support and contractor support services.</li><li>-(U) (\$ .252) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</li></ul> <p>(U) AEER</p> <ul style="list-style-type: none"><li>-(U) (\$ 1.395) Continue Hydrostatic Device system design and trade offs.</li><li>-(U) (\$ 5.481) Initiate EMD and software, integration, and test for the AEER source, continue AEER source acoustic processing software in the P-3C.</li><li>-(U) (\$ 1.289) Provide other engineering support and contractor support services.</li><li>-(U) (\$ .253) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</li></ul>		

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**Exhibit R-2a, RDTEN Project Justification**  
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-05</b>	0604261N Acoustic Search Sensors	H0480 ASW Sensors & Processing
<p>4. FY 2003 PLAN:</p> <ul style="list-style-type: none"><li>-(U) (\$ .795) Conduct EMD contractor test/intergration for GIM #4, complete and deliver (ready for training) GIM#4. Post delivery retrofit - All systems.</li><li>-(U) (\$ 1.020) Complete environmental software change proposals to be supplied as final GFE.</li><li>-(U) (\$ .700) Provide engineering support to EMD contract.</li><li>-(U) (\$ 1.000) Complete Hydrostatic Device system design and trade offs. Prepare for production.</li><li>-(U) (\$ 7.300) Continue software, integration, and test for multi-static active sensor systems.</li><li>-(U) (\$3.114) Provide other engineering support and contractor support services.</li></ul>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:					
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		<b>February 2002</b>					
PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing						
(U) B. PROGRAM CHANGE SUMMARY:							
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>				
(U) FY 2002 President's Budget:	20.545	16.825					
(U) Adjustments from the FY 2002 President's Budget:	-1.523	-0.149					
(U) FY 2003 President's Budget Submit:	19.022	16.676	13.929				
CHANGE SUMMARY EXPLANATION:							
( U ) Funding: The FY01 decrease of \$1.523 million reflects a decrease of \$1.069 million for a reprioritization of requirements within the Navy and a decrease of \$.454 million for a Small Business Innovative Research Assessment. The FY02 decrease of \$.149 million reflects an undistributed congressional reduction.							
( U ) Schedule: 4Q/01 Q/U DT/OT and 4Q/04 AEER source DT/OT - Due to our decision to proceed with an ECP (refer to Technical Change Summary explanation), the Q/U's and the AEER source were not required to go through DT/OT. 2Q/05 - 3Q/05 AEER Tech Eval moved to 2Q/07 AEER/NTAP Tech Eval and 4Q/05 - 1Q/06 AEER Opeval moved to 3Q/07 AEER/NTAP Opeval due to new CONOPs for search revealed during testing phases. Search requirements will be achieved through tactics and sensor processing upgrades. Added new milestones in FY05 and FY06 to provide additional program definition.							
( U ) Technical: During 1Q/01, the Weapons System Explosive Safety Review Board (WSESRB) imposed compliance to changes to the safety certification requirements for the AEER source. This required sonobuoy redesign and re-qualification.							
(U) C. OTHER PROGRAM FUNDING SUMMARY:							
<u>Line Item No. &amp; Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
(U) APN/P-3 Mod/(053800)							
(U) APN/SH-60R/(018200)			3.5	3.5	0	3.5	3.5
(U) OPN (404800) Q110B			9.7	10	10	10.5	9.3
(U) OPN (404800) HSF			1.9	1.1	0.7	0.7	0.7
<u>(U) Related RDT&amp;E</u>							
(U) P.E. 0603254N (ASW Systems Development)							

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																											
<b>RDT&amp;E, N / BA-05</b>	0604261N Acoustic Search Sensors	H0480 ASW Sensors & Processing																											
<p>(U) D. ACQUISITION STRATEGY: The GASS EMD contract was competitively awarded. Program development is based on a COTS open architecture hardware and software approach. AEER EMD will use a competitive contracting strategy. Supporting efforts utilize Qualified Product List (QPL) manufacturers and existing contracting vehicles where appropriate for development efficiency.</p> <p>(U) E. SCHEDULE PROFILE</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">FY 2001</th> <th style="width: 20%;">FY 2002</th> <th style="width: 20%;">FY 2003</th> <th style="width: 20%;">TO COMPLETE</th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>4Q/01 AEER MS-II</td> <td>3Q/02 GASS MS-III</td> <td></td> <td>4Q/05 TAMDA MS B</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>2Q/01 GASS PDR#3/CDR#2* 3Q/01 GASS PDR#4* 4Q/01 GASS CDR#3*</td> <td>3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4*</td> <td>2Q/03 AEER CDR</td> <td>3Q/06 TAMDA PDR</td> </tr> <tr> <td>(U) T&amp;E Milestones</td> <td>4Q/01 Q/U Testing</td> <td>1Q/02-2Q/03 GASS TTPRR**</td> <td></td> <td>2Q/07 AEER/NTAP TECH EVAL 3Q/07 AEER/NTAP OPEVAL</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>1Q/02 AEER SOURCE CONTRACT</td> <td></td> <td></td> </tr> </tbody> </table> <p>* Individual PDRs/CDRs for each of the GASS Interface Modules (GIMS)</p> <p>** TTPRR – Trainer Test Procedures and Results Report</p>						FY 2001	FY 2002	FY 2003	TO COMPLETE	(U) Program Milestones	4Q/01 AEER MS-II	3Q/02 GASS MS-III		4Q/05 TAMDA MS B	(U) Engineering Milestones	2Q/01 GASS PDR#3/CDR#2* 3Q/01 GASS PDR#4* 4Q/01 GASS CDR#3*	3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4*	2Q/03 AEER CDR	3Q/06 TAMDA PDR	(U) T&E Milestones	4Q/01 Q/U Testing	1Q/02-2Q/03 GASS TTPRR**		2Q/07 AEER/NTAP TECH EVAL 3Q/07 AEER/NTAP OPEVAL	(U) Contract Milestones		1Q/02 AEER SOURCE CONTRACT		
	FY 2001	FY 2002	FY 2003	TO COMPLETE																									
(U) Program Milestones	4Q/01 AEER MS-II	3Q/02 GASS MS-III		4Q/05 TAMDA MS B																									
(U) Engineering Milestones	2Q/01 GASS PDR#3/CDR#2* 3Q/01 GASS PDR#4* 4Q/01 GASS CDR#3*	3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4*	2Q/03 AEER CDR	3Q/06 TAMDA PDR																									
(U) T&E Milestones	4Q/01 Q/U Testing	1Q/02-2Q/03 GASS TTPRR**		2Q/07 AEER/NTAP TECH EVAL 3Q/07 AEER/NTAP OPEVAL																									
(U) Contract Milestones		1Q/02 AEER SOURCE CONTRACT																											

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**Exhibit R-2a, RDTEN Project Justification**  
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-05</b>			0604261N Acoustic Search Sensors				H0480 ASW Sensors & Processors					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	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	WX	Misc In-House		0.950	11/00	0.900	11/01	0.900	11/02	Continuing	Continuing	
Subtotal T&E				0.950		0.900		0.900		Continuing	Continuing	
Remarks:												
Contractor Support Services	C/FFP	Misc/Contracts	5.204	0.965	12/00	0.783	11/01	0.817	11/02	1.117	8.886	8.886
Program Management Support	WX	Misc In-House	6.453	0.140	10/00	0.140	10/01	0.140	10/02	Continuing	Continuing	
SBIR assessment						0.505					0.505	
Subtotal Management			11.657	1.105		1.428		0.957		Continuing	Continuing	
Remarks:												
Total Cost			94.710	19.022		16.676		13.929		Continuing	Continuing	
Remarks:												

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**Exhibit R-3, Project Cost Analysis**  
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