

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604261N, ACOUSTIC SEARCH SENSORS			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Total PE Cost	28.297	41.984	18.325	46.457	39.439	38.845	31.495	16.979	
0480 ASW SENSORS & PROC	16.895	8.382	18.325	46.457	39.439	38.845	31.495	16.979	
4017 ARPDD	7.002	28.223							
9999 CONGRESSIONAL ADDS	4.400	5.379							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ASW Sensors and Processing project provides the tools and methods necessary to maintain naval superiority by preventing hostile submarines from disrupting the US Navy's ability to control the sea lines of communication and carry out their missions. This project encompasses the System Development and Demonstration (SDD) phase and the follow on increment of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) platforms in cueing, search, localization, and track. 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 overcome the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project 0480 provides funding for the engineering development of solutions that detect, classify, and track threat submarines. Efforts being funded during the period identified are the Extended Echo Ranging (EER) family of multi-static active systems. The development efforts include the Improved Extended Echo Ranging (IEER) multi-static search receiver sensor for active large area ASW search; the Advanced Extended Echo Ranging (AEER) active coherent (electronic) sound source, a new start in FY08, which provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training and Rules of Engagement restrictions; and Advanced Processing Builds (APB) which provide signal processing improvements to achieve increased target detection and classification capabilities. APB also includes efforts for providing common software and hardware solutions across all ASW platforms.

(U) (4017) - The Automatic Radar Periscope Detection and Discrimination (ARPDD) Project provides a fully automated periscope detection, classification, and tracking capability to reliably detect periscopes and masts, and reliably discriminate periscopes from clutter and confusion targets. This capability is suitable for air and surface platforms. This project funds only the airborne application. ARPDD will be integrated into the MH-60R as directed by CNO Itr N782C1C/6U876009. Consequently, ARPDD funding in FY08-11 has been transferred to PE 0604216N for execution.

(U) (9999) - Congressional Adds.

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B. PROGRAM CHANGE SUMMARY

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget:				
Current BES:	33.569	36.764	45.043	38.000
Total Adjustments	28.297	41.984	18.325	46.457
	-5.272	5.220	-26.718	8.457
Summary of Adjustments				
Congressional Reductions	-0.029			
Congressional Rescissions				
Congressional Undistributed Reductions	-0.524	-0.180		
Congressional Increases		5.400		
Economic Assumptions			0.002	0.866
Miscellaneous Adjustments	-4.719		-26.720	7.591
Subtotal	-5.272	5.220	-26.718	8.457

Schedule:

0480 - Multi Static Active (Improved). Added APB (1) in 1Q/09 and APB (2) in 1Q/11 to show contract milestones. Moved APB (1) SQT from 1Q/08 to 2Q/08 and APB (2) SQT from 1Q/10 to 2Q/10; moved APB (1) S/W release from 3Q/08 to 4Q/08 and APB (2) S/W release from 3Q/10 to 4Q/10 for more accurate planning.

Multi Static Active (Advanced). Accelerated AEER funding by 1 year as reflected on schedule. Added Milestone C, 4Q/FY11 and Milestone B Block 2, 4Q/FY12.

4017 - ARPDD funding in FY08-11 has been transferred to PE 0604216N for insertion of ARPDD technology in MH-60R.

Technical: 0480 - N/A

4017 - N/A

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS			PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0480 ASW SENSORS & PROC		16.895	8.382	18.325	46.457				
RDT&E Articles Qty				300	300				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The ASW Sensors and Processing project provides the tools and methods necessary to maintain naval superiority by preventing hostile submarines from disrupting the US Navy's ability to control the sea lines of communication and carry out their missions. This project encompasses the System Development and Demonstration (SDD) phase and the follow on increment of sensor systems to improve the mission effectiveness of airborne Anti-Submarine Warfare (ASW) platforms in cueing, search, localization, and track. 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 overcome the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project 0480 provides funding for the engineering development of solutions that detect, classify, and track threat submarines. Efforts being funded during the period identified are the Extended Echo Ranging (EER) family of multi-static active systems. The development efforts include the Improved Extended Echo Ranging (IEER) multi-static search receiver sensor for active large area ASW search; the Advanced Extended Echo Ranging (AEER) active coherent (electronic) sound source, a new start in FY08, which provides a search and localization capability in all water environments and could eliminate current impulsive source safety, training and Rules of Engagement restrictions; and Advanced Processing Builds (APB) which provide signal processing improvements to achieve increased target detection and classification capabilities. APB also includes efforts for providing common software and hardware solutions across all ASW platforms. The 600 sonobuoy test articles will support software and hardware integration flight tests and Technical Evaluation (TECHEVAL)/Operational Evaluation (OPEVAL) for AEER Block 1.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Deliver IEER (1 & 2), commence AEER	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	16.895	8.382	18.325	46.457
RDT&E Articles Qty			300	300

Software development, integration, and test for Multi-Static ASW (MSA) sensor systems. Provides P-3 platform integration of multi-static technology improvements allowing increased weapons system efficiency and decreased fleet operator workload in the littoral ASW mission. New start program in FY08 to develop a coherent source that will satisfy the search and localization requirement in the harsh, shallow water littorals.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS	PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
(U) OPN (404800) SSQ-110		4.0	15.1	34.2						
(U) P.E. 0603254N (ASW Systems Development)										

D. ACQUISITION STRATEGY: The integration of Multi-Static ASW (MSA) into increased number of P-3 Aircraft can be achieved as an option under the current MSA contracts. Various alternatives of MSA implementation are also being investigated that could require Full and Open competition.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5			PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 0480, ASW SENSORS & PROC					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hardware Development	WX	TBD	1.000			3.500	10/07	7.500	10/08	13.100	25.100	
SUBTOTAL PRODUCT DEVELOPMENT			1.000			3.500		7.500		13.100	25.100	

Remarks:

SUPPORT												
Software Development (Phase II)	WX	NAWCAD, PATUXENT RIVER MD	4.595	2.100	10/06	2.100	10/07	12.500	10/08	30.060	51.355	
Studies & Analyses	WX	NAWCAD, PATUXENT RIVER MD				4.731	10/07	4.524	10/08	6.419	15.674	
Studies & Analyses	C-CPFF	LOCKHEED MARTIN CORP, MANASSAS, VA	.200								.200	.200
Technical Data	WX	NAWCAD, PATUXENT RIVER MD	7.329	.900	10/06			.500	10/08	6.150	14.879	
SUBTOTAL SUPPORT			12.124	3.000		6.831		17.524		42.629	82.108	

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD	4.350	.750	11/06	1.000	10/07	3.500	10/08	15.550	25.150	
SUBTOTAL TEST & EVALUATION			4.350	.750		1.000		3.500		15.550	25.150	

Remarks:

MANAGEMENT												
Contractor Engineering Support	VARIOUS	VARIOUS	9.144	1.296	10/06	2.370	11/07	6.290	11/08	20.228	39.328	39.328
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	66.251	2.436	10/06	2.765	10/07	7.026	10/08	22.635	101.113	
Program Mgmt Support (Cont.)	C-FFP	VARIOUS	41.183	.700	11/06	.558	11/07	1.385	11/08	3.785	47.611	47.611
Program Mgmt Support (Gov.)	WX	NAWCAD, PATUXENT RIVER MD	7.363	.200	10/06	1.301	10/07	3.232	10/08	8.831	20.927	
SUBTOTAL MANAGEMENT			123.941	4.632		6.994		17.933		55.479	208.979	

Remarks:

Total Cost			141.415	8.382		18.325		46.457		126.758	341.337	
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Remarks:

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE:							
Multi-Static Active (Improved)																									February 2007							
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
RDT&E,N / BA-5										0604261N, ACOUSTIC SEARCH SENSORS										0480, ASW SENSORS & PROC												
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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
<b>Acquisition Milestones</b>									MSA Integration Contract △				APB (1) INTEGRATION CONTRACT △				APB (2) INTEGRATION CONTRACT △															
Prototype Phasae																																
System Development																																
EDM Delivery																																
Software Development/Integration					Start APB Development △								APB (1) S/W release △								APB (2) S/W RELEASE △											
<b>Test &amp; Evaluation Milestones</b>									MSA Integration TECH EVAL △				APB (1) SQT △				APB (2) SQT △															
Development Test																																
Operational Test									MSA Integration OPEVAL △																							
<b>Production Milestones</b>																																
LRIP I FY05																																
FRP FY07																																
Deliveries																																



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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE:										
Multi-Static Active (Advanced)																									February 2007										
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME															
RDT&E,N / BA-5										0604261N, ACOUSTIC SEARCH SENSORS										0480, ASW SENSORS & PROC															
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013						
	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			
Acquisition Milestones													MS B △													MS C △					MS B (blk 2) △				
System Development Localization																	CDR (blk 1) △																		
EDM Delivery																					H/W EDM (blk 1) △					△	H/W EDM (blk 1)	△	H/W EDM						
Software Integration																									Integration S/W Delivery (blk 1) △										
Test & Evaluation Milestones																																			
Development Test																																			
Operational Test																																			
Production Milestones																																			

Note: AEER, is a spiral upgrade development effort consisting of two block builds. Block 1 is to develop and produce a Coherent Source buoy to provide a multi-static active localization system capability. Block 2 will increase the source level and provide a search capability.



EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS			PROJECT NUMBER AND NAME 4017, ARPDD				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
4017 ARPDD		7.002	28.223						
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Automatic Radar Periscope and Discrimination (ARPDD) Project provides a fully automated periscope detection, classification, and tracking capability to reliably detect periscopes and masts, and reliably discriminate periscopes from clutter and confusion targets. This capability is suitable for air and surface platforms. This project funds only the airborne application. This capability is essential for effective detection of submarines in congested Littoral areas. This funding is for engineering development and evolutionary application of the ARPDD capability to Airborne radars. ARPDD will be integrated into the MH-60R as directed by CNO N782C1C/6U876009. Consequently, ARPDD funding in FY08-11 has been transferred to PE 0604216N for execution.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Project planning / acquisition document preparation/ tech trade off studies / SOW	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Sub-total Cost	7.002	28.223		
RDT&E Articles Qty				

ARPDD is a follow-on to a Science and Technology program previously funded by the Office of Naval Research in PE0603747N. Funding is being used for project planning, acquisition documentation preparation, performing technical trade-off studies, developing specifications, and a Statement of Work in preparation for awarding a contract for development of an airborne ARPDD capability. Funding will be used to award a development contract for ARPDD System Development and Demonstration (SDD) and associated government support.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS	PROJECT NUMBER AND NAME 4017, ARPDD

C. OTHER PROGRAM FUNDING SUMMARY:  
N/A

D. ACQUISITION STRATEGY: Analyze merits of sole source versus competitive procuremnt. Explore Alternatives. Award prime contract to TBD contractor. Technical support will be provided by NAWCWD (China Lake) and JHU/APL.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 4017, ARPDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development	VARIOUS	VARIOUS	2.547	11.628	03/07						14.175	14.175
Primary Hdw Development	BAA-CPFF	Telephonics, Farmingdale, NY		10.000	10/06						10.000	10.000
SUBTOTAL PRODUCT DEVELOPMENT			2.547	21.628							24.175	

Remarks:

SUPPORT												
Software Development	VARIOUS	VARIOUS		1.300	11/06						1.300	1.300
Software Development	WX	NAWCWD, CHINA LAKE CA	.390	.900	11/06						1.290	
Studies & Analyses	C-CPFF	JOHNS HOPKINS UNIV, COLUMBIA, MD	1.164	.700	11/06						1.864	1.864
SUBTOTAL SUPPORT			1.554	2.900							4.454	

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

MANAGEMENT												
Contractor Eng Sup	VARIOUS	VARIOUS	3.224	.690	11/06						3.914	3.914
Government Engineering Support	WX	NAWCWD, CHINA LAKE CA	3.001	1.885	11/06						4.886	
Government Engineering Support	WX	NAWCAD, PATUXENT RIVER MD	.407	.500	11/06						.907	
Program MGT Support (Cont)	VARIOUS	VARIOUS	1.476	.410	12/06						1.886	1.886
Program MGT Support (Gov)	WX	NAWCWD, CHINA LAKE CA	.800	.200	11/06						1.000	
Travel	TO	NAVAIR, PAXTUXENT RIVER MD	.053	.010	11/06						.063	
SUBTOTAL MANAGEMENT			8.960	3.695							12.656	

Remarks:  
Columns may not add due to rounding.

Total Cost			13.061	28.223							41.285	
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Remarks:

EXHIBIT R4, Schedule Profile																								DATE:								
Automatic Radar Periscope Detection and Discrimination (ARPD)																								February 2007								
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RDT&E,N / BA-5												0604261N, ACOUSTIC SEARCH SENSORS												4017 ARPD								
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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
<b>Acquisition Milestones</b>																																
IPR																																
Prototype Phase (Prior to FY02)																																
System Development																																
Contract Award																																
System Development																																
SDD Contract Award																																
EDM & Pre Production Delivery																																
Software																																
Software Development and Test																																
Software																																
Software Development and Test																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
LRIP I FY05																																
Deliveries																																



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APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604261N, ACOUSTIC SEARCH SENSORS				PROJECT NUMBER AND NAME 9999 Congressional Adds		
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
9999 Congressional Adds		4.400	5.379						
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Congressional Adds.</p> <p>B. ACCOMPLISHMENTS / PLANNED PROGRAM:</p>									
4017C		FY 2006	FY 2007	FY 2008	FY 2009				
Accomplishments / Effort / Sub-total Cost		2.429							
RDT&E Articles Qty									
<p>Automatic Radar Periscope Detection and Discrimination. Funding will be used to prepare for System Development and Demonstration (SDD) of ARPDD technology.</p>									
		9,773.000	FY 2006	FY 2007	FY 2008	FY 2009			
Accomplishments / Effort / Sub-total Cost		1.971	.996						
RDT&E Articles Qty									
<p>Acoustic Environmental Sensor System. Continue development and testing of A-plus sized sonobuoy prototype and in-buoy processing software, high dynamic range omni directional hydrophone, sound velocity, profiling, data collection ability and reverberation data collection capability.</p>									
9A31		FY 2006	FY 2007	FY 2008	FY 2009				
Accomplishments / Effort / Sub-total Cost			4.383						
RDT&E Articles Qty									
<p>AN/USQ-78B Acoustic Processor Improvements. Provides upgrades to the AN/USQ-78B Airborne Acoustic Processor System through the Advanced Rapid COTS Insertion (ARCI)/Advanced Processing Builds (APB) process. The development will provide common, open-architecture (OA) standards-based solutions through software enhancements and technical refresh to increase the AN/USQ-78B system performance to meet the ASW demands against small hostile submarines.</p>									