

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		R-1 ITEM NOMENCLATURE 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY					
COST (In Millions)		FY 2008	FY 2009	FY 2010			
Total PE Cost		9.620	7.121	1.677			
0324 / ADV COMBAT SYSTEM TECHNOLOGY		7.307	4.329	1.677			
9999 / CONGRESSIONAL ADD		2.313	2.792	0.000			
<p>A. MISSION DESCRIPTION:</p> <p>The Advanced Combat System Technology line provides engineering studies, real time instrumentation, risk reduction experiments conducted in a distributed computer architecture and Tactical Information Management (TIM) concepts in a computing testbed. The program matures both technical and business model integration for warfare systems programs of record in an open architecture environment. A priority is the design of the flow and display of tactical information through the "detect-control-engage" process to provide decision quality information.</p> <p>Project Unit 0324: Funding is included to ensure all Naval systems, family of systems, and programs move to modular Open Architectures (OA) in accordance with DoDD 5000.1 dated 12 May 2003 which mandates all DoD programs to utilize open systems architecture in order to rapidly field affordable, interoperable systems. By direction of the Navy SAE, PEO IWS is assigned overall responsibility and authority to direct the Navy's OA effort which this project supports. This effort establishes acquisition strategies, develops guidance, and develops analysis of alternatives to determine OA software reuse practices within and across all Navy Communities of Interest (COI - Surface, Subsurface, Air, Space, and C4I). This project also works closely with the Test and Evaluation (T&E) and certification communities in defining regression testing and certification requirements for all OA Commercial Off-the-Shelf upgrades and software reuse applications. Ultimately, this project seeks to create a strategic shift in the acquisition process to facilitate cooperative cross-domain/COI business relationships. This will improve economies of scale throughout the Navy. This development effort will identify the business case and return on investment for moving the Navy towards an open systems approach, support the development of open systems technologies, and integrate best practices for open systems development within Naval acquisition. This Naval OA project will ensure Navy-wide system architectures are extensible and scaleable in function, capacity, and workload to meet Joint warfighting requirements. This also includes the identification and development of common software components, functions, and reuse methodologies. In summary, this funding supports systems engineering required across all Naval systems as they are migrated to function in a joint net centric warfare environment.</p>							

CLASSIFICATION:**UNCLASSIFIED****EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)**

DATE

May 2009

APPROPRIATION/BUDGET ACTIVITY

RDTEN/BA 4

R-1 ITEM NOMENCLATURE

0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY**B. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	11.515	4.367	10.086
FY10 President's Budget	9.620	7.121	1.677
Total Adjustments	-1.895	2.754	-8.409
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	-0.019	0.000
SBIR/STTR/FTT Assessment	-0.148	0.000	0.000
Program Adjustments	-1.747	2.769	-8.391
Rate/Misc Adjustments	0.000	-0.004	-0.018
Total	-1.895	2.754	-8.409

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2008	FY 2009	FY 2010	Total Cost
PE 0604307N/ 1447 (AEGIS Surf Combatant Combat Sys Imp)	148.332	187.905	178.457	514.694
PE 0604755N/ 2178 (Ship Self Defense System)	25.946	30.451	25.664	82.061
PE 0603582N/ 0164 (Common Network Interface)	13.550	13.500	0.000	27.050
PE 0603658N/2039 (Cooperative Engagement Capability)	31.060	38.212	56.586	125.858

D. ACQUISITION STRATEGY:

This risk reduction effort evolved and shifted from a PEO IWS 1.0 task to NSWC/Dahlgren to an ASN-RDA directed task to fund the Navy's OA Enterprise effort from this core OA Budget line (policy statement dated 5 August 2004). The strategy was further refined in the DCNO requirement of 23 December 2005 (N6/7) with guidance for this effort to assist the MDA, program managers, and resource sponsors in assessing enterprise program assets where appropriate. OPNAV has directed this program to provide objective, measurable, performance based assessments as baselines for future system changes and spiral developments. It is also directed to serve as the coordinator for end-to-end force level system engineering experiments (e.g., OA/Fn Experiment). Furthermore, it directs an OA asset repository capability that incorporates and enterprise configuration management process be built and maintained.

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4	R-1 ITEM NOMENCLATURE 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY	
E. MAJOR PERFORMERS: NSWC/ Dahlgren - Dahlgren, Virginia - Technical Authority for OA Program for PEO IWS NSWC Carderock, & ALION- Program Management Support NAVAIR - OA Domain Support Industry: IBM, ANGLE SPAWAR-OA Domain Support		

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY			PROJECT NUMBER AND NAME 0324/ADV COMBAT SYSTEM TECHNOLOGY		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	7.307	4.329	1.677				
RDT&E Articles Qty	0	0	0				
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
<p>Project Unit 0324: Funding is included to ensure all Naval systems, family of systems, and programs move to modular Open Architectures (OA) in accordance with DoDD 5000.1 dated 12 May 2003 which mandates all DoD programs to utilize open systems architecture in order to rapidly field affordable, interoperable systems. By direction of the Navy SAE, PEO IWS is assigned overall responsibility and authority to direct the Navy's OA effort which this project supports. This effort establishes acquisition strategies, develops guidance, and develops analysis of alternatives to determine OA software reuse practices within and across all Navy Communities of Interest (COI - Surface, Subsurface, Air, Space, and C4I). This project also works closely with the Test and Evaluation (T&E) and certification communities in defining regression testing and certification requirements for all OA Commercial Off-the-Shelf upgrades and software reuse applications. Ultimately, this project seeks to create a strategic shift in the acquisition process to facilitate cooperative cross-domain/COI business relationships. This will improve economies of scale throughout the Navy. This development effort will identify the business case and return on investment for moving the Navy towards an open systems approach, support the development of open systems technologies, and integrate best practices for open systems development within Naval acquisition. This Naval OA project will ensure Navy-wide system architectures are extensible and scaleable in function, capacity, and workload to meet Joint warfighting requirements. This also includes the identification and development of common software components, functions, and reuse methodologies. In summary, this funding supports systems engineering required across all Naval systems as they are migrated to function in a joint net centric warfare environment.</p>							

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4	PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY	PROJECT NUMBER AND NAME 0324/ADV COMBAT SYSTEM TECHNOLOGY	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
Change Naval Processes and Business Practices	3.285	2.303	1.677
RDT&E Articles Quantity	0	0	0
Naval Business Practices: This funding supports the required activities of the OA Enterprise Team necessary to change Naval Business Practices including a) the development and refinement of policies, guidance and terminology required to establish a consistent approach for OA across the enterprise; b) the development and maintenance of analytical toolsets (i.e. OA Assessment Tool) to assist the Milestone Decision Authority, PM, and Resource Sponsor in assessing a programs openness, where appropriate, to make informed OA investment decisions; c) the implementation and refinement of OA Contract Guidance to be used in applicable procurements tailored as necessary to meet domain specific requirements; and d) the facilitation of design disclosure and cross-domain component reuse to reduce costs and enable more effective technology insertion including the development of an OA Enterprise Asset Repository Capability that incorporates a common end-user licensing agreement and enterprise configuration management processes that are open and accessible to all Naval and Joint programs and qualified vendors. During FY10 the funding will cover the Software Hardware Asset reuse Enterprise (SHARE) effort. SHARE establishes a functional process and asset repository to publish government owned assets central to the Open Architecture strategy. This repository is key to the health and maturity of the Navy OA effort and serves as a pilot project that will ultimately spiral to an enterprise wide asset.			
	FY 2008	FY 2009	FY 2010
OA Systems Engineering Leadership	1.094	0.582	0.000
RDT&E Articles Quantity	0	0	0
Systems Engineering: This funding supports systems engineering collaboration across the enterprise to facilitate the fielding of interoperable capabilities including a) the alignment of PEO architectures (i.e. PEO IWS and PEO C4I); b) conducting system engineering experimentations (e.g. OA/FORCEnet) to increase coordination efficiency and capture activities, products, and artifacts (including DoD artifacts products, UML, Code, Documentations, Tools, and Data) for potential reuse; c) overseeing OA implementation efforts ensuring standardized and disciplined processes are utilized across domains (e.g. standards and interfaces, services); d) identifying and fostering "quick win" candidates and near-term proofs of concept for OPNAV to field additional capabilities at reduced costs; e) working with the S&T community to ensure OA remains relevant and coordinating on emerging technologies; and f) working with the T&E community and academia /industry partners to identify opportunities to reduce T&E expenses as a result of OA.			
	FY 2008	FY 2009	FY 2010
Change the Naval and Marine Corps Cultures to Institutionalize OA Principle	1.821	0.868	0.000
RDT&E Articles Quantity	0	0	0
OA Enterprise Communications and Training: This funding supports the activities to enable the cultural adoption of OA principles and practices through stakeholder management, communications, training, and OA Knowledge Management. Key activities include the development on an enterprise workforce training and education program and establishment of professional curricula (OA modular acquisition and OA systems engineering) with academia and Naval Institutes. This program plan includes participation, liaison, and coordination with multiple stakeholders including the OSD Open Systems Joint Task Force (OSJTF), Naval Post Graduate School, Defense Acquisition University (DAU), FORCEnet, Industry Days, and other communication vehicles, to ensure the optimal OA standards and technologies are identified and incorporated into Naval system acquisition.			

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4	PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY	PROJECT NUMBER AND NAME 0324/ADV COMBAT SYSTEM TECHNOLOGY		
		FY 2008	FY 2009	FY 2010
Align the Naval Enterprise Across All Domains to Implement OA		1.107	0.576	0.000
RDT&E Articles Quantity		0	0	0
<p>OA Enterprise Alignment: This funding supports the preparation and execution of the quarterly OA Executive Team Lead Council meetings and reporting requirements of the OA Executive Team (OAET). Specifically, this includes OA Executive Committee reporting of action items to DASN, monthly reports from the OA Chairman, fleet bi-weekly reports, report to Congress, quarterly domain execution reports, coordinating with OPNAV to review SPII efforts, as well as the annual OA budget submission and financial reporting for this project. Alignment across the Enterprise also includes the development and management of Implementation Roadmaps to ensure integration.</p>				

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EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY				PROJECT NUMBER AND NAME 0324/ADV COMBAT SYSTEM TECHNOLOGY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)			FY 2009 Cost (\$000)	FY 2009 Award Date	FY 2010 Cost (\$000)	FY 2010 Award Date		Total Cost (\$000)	Target Value of Contract
SE/OA Domain Support	SS/CPFF	APL / Baltimore, MD	0.950			0.000		0.000			0.950	0.000
Systems Engineering	WR	NSWC / Dahlgren, VA	9.453			1.962	OCT-08	1.677	NOV-09		CONT	0.000
Systems Engineering	WR	NSWC/CRANE & Carderock	1.835			0.127	NOV-08	0.000			2.374	0.000
Systems Engineering	CPAF	Miscellaneous	4.491			0.940	NOV-08	0.000			5.456	0.000
OA DOMAIN SUPPORT	WR	NUWC/Newport, Spawar, Navair	12.386			0.000		0.000			12.386	0.000
SE/Signal Processor	CPAF	Lockheed Martin	6.000			0.000		0.000			6.000	0.000
SE/Signal Processor	CPAF	BAE	0.300			0.000		0.000			0.300	0.000
SE/Signal Processor	CPAF	Raytheon	0.100			0.000		0.000			0.100	0.000
SE/Signal Processor	WR	NSWC/DD, NRL, PHD	0.600			0.000		0.000			0.600	0.000
Subtotal Product Development			36.115			3.029		1.677			CONT	0.000
Remarks:												
Industry Development	CPFF	IBM, ANGLE	7.114			1.000	OCT-08	0.000			9.908	0.000
Technical Data-Academia	WR	NPS-Monterey/DAU	1.598			0.000	NOV-08	0.000			2.337	0.000
Software Development	CPFF	MITRE, SEI	0.309			0.000		0.000			0.309	0.000
Subtotal Support Costs			9.021			1.000		0.000			12.554	0.000
Remarks:												
Operational Test & Evaluation	WR	NSWC/DD	2.416			0.000		0.000			2.416	0.000
OA Asset Repository (SBIR Account)	WR	Miscellaneous	0.150			0.000		0.000			0.150	0.000
Subtotal Test and Evaluation			2.566			0.000		0.000			2.566	0.000
Remarks:												
Program Management Support	CPAF	Miscellaneous	2.777			0.300	NOV-08	0.000			CONT	0.000
SBIR Assessment (Cong Add)	CPAF	NSWC/DD	2.435			0.000		0.000			4.748	0.000
Subtotal Management Services			5.212			0.300		0.000			CONT	0.000
Remarks:												
Total Cost			52.914			4.329		1.677			CONT	0.000

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EXHIBIT R-4, SCHEDULE PROFILE									DATE May 2009				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME							
RDTEN/BA 4		0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY				0324/ADV COMBAT SYSTEM TECHNOLOGY							
Fiscal Year	2008				2009				2010				
	1	2	3	4	1	2	3	4	1	2	3	4	
Acquisition Milestones													
Incorporate OA Principles in Strategies, Contracts, Reviews, Requirements, & Other Documentation	△	△	△	△	△	△	△	△	△	△	△	△	
Change Culture through OA Education, Outreach, & Training	△	△	△	△	△	△	△	△	△	△	△	△	
OA Collaboration with Information Technology Management Council	△	△	△	△	△	△	△	△	△	△	△	△	
Adapt ONR Technologies	△	△	△	△	△	△	△	△	△	△	△	△	
Conduct Program Assessments	△	△	△	△	△	△	△	△	△	△	△	△	
Update Naval OA/FN Technical Stds	△		△										
Publish Contract Guidebook Update				△				△				△	
Host Contracting/Industry Symposium					△				△				
Deliver Report to Congress	△	△	△	△	△	△	△	△	△	△	△	△	
Conduct Lifecycle Affordability Pilot			△	△	△	△	△	△					
Host OA Lead Council Meetings	△	△	△	△	△	△	△	△	△	△	△	△	
OA Enterprise Asset Repository	△	△	△	△	△	△	△	△	△	△	△	△	
Test & Evaluation Milestones													
Production Milestones													
Deliveries													

* Not required for Budget Activities 1, 2, 3, and 6

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EXHIBIT R-4a, SCHEDULE DETAIL				DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY		PROJECT NUMBER AND NAME 0324/ADV COMBAT SYSTEM TECHNOLOGY
Schedule Profile		FY 2008	FY 2009	FY 2010
Incorporate OA Principles in Acquisition Strategies and Contracts		1-4Q	1-4Q	1-4Q
Change Culture through OA Education, Outreach and Training		1-4Q	1-4Q	1-4Q
OA Collaboration with Information Technology Management Council		1-4Q	1-4Q	1-4Q
Adapt ONR Technologies		1-4Q	1-4Q	1-4Q
Conduct Program Assessments		1-4Q	1-4Q	1-4Q
Naval OA/Fn Technical Stds Profiles		1Q/3Q		
Publish Contract Guidebook Update		4Q	4Q	4Q
Host Contracting/Industry Symposium			1Q	1Q
Deliver Report to Congress		1-4Q	1-4Q	1-4Q
Conduct Lifecycle Affordability Pilot		3-4Q	1-4Q	
OA Lead Council Meeting		1-4Q	1-4Q	1-4Q
OA Enterprise Asset Repository Updates		1-4Q	1-4Q	1-4Q

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4	PROGRAM ELEMENT NUMBER AND NAME 0603382N/ADVANCED COMBAT SYSTEMS TECHNOLOGY	PROJECT NUMBER AND NAME 9999/CONGRESSIONAL ADD	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2008	FY 2009	FY 2010
9999N Open Arch/Maint Free Operating Period (OA/MFOP)	0.000	2.792	0.000
RDT&E Articles Quantity	0	0	0
Open Architecture/Maintenance Free Operating Period (MFOP) - This funding will provide engineering, technical, and support services to the Open Architecture Program. The initial program for transitioning into the Surface Domain programs of record the MFOP lessons learned and tools derived from the AN/BSY-10 2004-2005 pilot co-sponsored with ASN (RD&A). MFOP incorporates processes, software tools and Commercial Off-The-Shelf (COTS) hardware redundancy used in open-architected systems such that the system self-checking and self-healing capabilities virtually eliminates at-sea open cabinet maintenance and improve Operational Availability (OA). This funding also extends the application of OA/MFOP and investigates the adoption of the MFOP tools to other National Security Systems as an OA reusable component, leveraging lessons learned from the submarine MFOP program; including secure interoperability (IA) of electronic based acoustics and non-acoustics combat weapons systems and subsystems.			
	FY 2008	FY 2009	FY 2010
9429A Open Architecture/MFOP	2.313	0.000	0.000
RDT&E Articles Quantity	0	0	0
Open Architecture/Maintenance Free Operating Period (MFOP) - This funding supports the pilot program for AN/BSY-10, co-sponsored with ASN (RDA), it incorporates software tools and hardware redundancy into Commercial Off-The-Shelf (COTS) based open architected systems such that the system self-checking and self-healing capabilities virtually eliminate at-sea open cabinet maintenance. This funding extends the application of OA/MFOP to investigate the adoption of MFOP tools in other Navy National Security Systems as an OA reusable component.			