

CLASSIFICATION:		UNCLASSIFIED					
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE February 2008	
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		R-1 ITEM NOMENCLATURE 0604518N/COMBAT INFORMATION CENTER CONVERSION					
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	7.502	18.365	14.792	13.811	5.724	5.715	5.811
3094 / USW Decision Support	6.506	16.776	14.792	13.811	5.724	5.715	5.811
9999 / Congressional Add	0.996	1.589	0.000	0.000	0.000	0.000	0.000
<p>A. MISSION DESCRIPTION:</p> <p>The objective of this Program Element (PE), under Project 3094, is to develop a net-centric Undersea Warfare Decision Support System (USW-DSS) capability to support the Theater Anti-Submarine Warfare (ASW) Commander (TASWC), Sea Combat Commander (SCC), Anti-Submarine Warfare Commander (ASWC) and the Mine Warfare Commander (MIWC). USW will consist primarily of computer software components that will be developed and implemented to comply with FORCEnet and Open Architecture Computing Environment (OACE) architecture standards and guidance. The resultant system will yield a single software architecture for afloat ASW Combat Command and Control (C2) that will bridge the Command, Control, Communications, Computers, & Intelligence (C4I) domain and the combat systems, to achieve the capabilities described in USW-DSS Increment 1 Capabilities Production Document (CPD). USW-DSS will provide the following integrated capabilities on board selected Carrier Strike Groups (CSGs): plan, conduct, and coordinate USW operations with multiple ASW and MIW platforms; rapidly receive and implement the directions of the SCC, respond to the actions of other assigned platforms and make inputs to the SCC and other platforms concerning the current state of the tactical situation; encompass other assets that may be available in the form of deployed sensor fields, autonomous vehicles and other similar capabilities; communicated intentions, on-going actions, requirements, and results to peer-level warfare commanders, supporting commands and higher authority; integrate functionality and interoperate with the needs of the TASWC and capabilities already available at theater commands; receive and distribute contact/track data, Tactical Decision Aid (TDA) data, and other information necessary for data fusion and providing coordinated situational awareness. Assets assigned to the TASWC and the SCC may include surface combatants; ASW aircraft; dedicated Mine Countermeasure (MCM) platforms; submarines; undersea surveillance platforms; shore processing facilities; supporting commands. These form a hierarchy of participants that will each be provided with varying levels of net-centric USW-DSS functionality.</p> <p>This PE, under Project 9844, in FY07 developed preliminary network accessible data services that can be used to gain a strategic advantage. This capability will serve threat/force information and other USW services on-demand to other participants in the network as independent services that are accessed in a standardized manner, providing more reliable, consistent data sets across programs, and easier and timelier updates to data sets.</p> <p>This PE, under Project 9999 in FY08, will develop an environmentally sealed, ruggedized, large-scale display for Tactical Operations Centers. This effort consists of the development, testing, and delivery of a production representative, environmentally sealed, 82-inch fan-less Light Emitting Diode (LED) driven, SCRAMscreen polyplaner array display system for the USN ASW Dead-Reckoning Table program.</p>							

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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	R-1 ITEM NOMENCLATURE 0604518N/COMBAT INFORMATION CENTER CONVERSION								
B. PROGRAM CHANGE SUMMARY:									
Funding:	FY 2007	FY 2008	FY 2009						
FY 2008 President's Budget Controls	7.679	17.139	12.769						
FY 2009 President's Budget Controls	7.502	18.365	14.792						
Total Adjustments	- 0.177	1.226	2.023						
Summary of Adjustments	FY 2007	FY 2008	FY 2009						
Undistributed General/Congressional Adjustments	- 0.008	- 0.363	- 0.067						
SBIR/STTR Transfers	-0.169								
Congressional Add		1.589							
Program Adjustments			2.090						
Subtotal	- 0.177	1.226	2.023						
C. OTHER PROGRAM FUNDING SUMMARY:									
OPN BLI 2176 / USW Support Equipment									
Specific Sub-Procurement Item:									
Space Information Command and Control Programs (N61), Undersea Warfare-Decision Support System (USW-DSS)									
Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
OPN/BLI 2176/USW Support Equipment (Grand Total BLI)	9.160	14.805	15.578	15.699	15.477	13.478	12.467	CONT.	CONT.
OPN/BLI 2176/USW Support Equipment (Related N61 Portion)	4.460	6.100	2.299	2.760	3.657	3.723	3.669	CONT.	CONT.
D. ACQUISITION STRATEGY:									
- Hardware/Software integration contractor to be funded through SBIR Phase III contract (in process of award).									

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E. MAJOR PERFORMERS: <ul style="list-style-type: none"> - Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD - USW-DSS OMI/HSI support, test & evaluation support - Naval Air Warfare Center (NAWC), Patuxent River, MD - USW-DSS interface design and documentation, software management, test & evaluation - NAVSEA, Carderock, MD - USW-DSS interface design and documentation, software management, test & evaluation - NAVSEA, Keyport, WA - USW-DSS Carrier integration, track management - NAVSEA, Newport, RI - USW-DSS Technical Design Agent (TDA), CHENG, submarine integration. - SSC, San Diego, CA - GCCS-M, C2 collaboration tools, network and security certifications, mission planner development - Progeny Systems Corporation, Manassas, VA - USW-DSS hardware/software integration (Builds 1/2) 		

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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION			PROJECT NUMBER AND NAME 3094/USW Decision Support		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	6.506	16.776	14.792	13.811	5.724	5.715	5.811
RDT&E Articles Qty	0	0	0	0	0	0	0
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:							
Project 3094 will develop the Undersea Warfare Decision Support System (USW-DSS) that will:							
<p>1) Provide a critical Command & Control (C2) capability package that includes improvements in battle group vulnerability assessments, sensor performance predictions, mission planning and execution improvements, and optimized search planning and collaboration capabilities for the SCC, TASWC, MIW Commander and ASW Commander;</p> <p>2) Provide full capability to plan and conduct USW operations through functional alignment of platforms/sensors to exploit the environment and improved allocation of resources; and</p> <p>3) Increase lethality and survivability through improved asset allocation, optimized platform/sensor placement, and increased situational awareness.</p>							
<p>These capabilities will provide a consistent, accurate, and timely situational understanding of the underwater battle space and the various entities that may influence it, including force disposition and the environment (atmospheric, oceanographic and geographic), to all participants that are in the process of conducting either ASW, MIW or other warfare operations. USW-DSS capabilities will be developed and integrated in a build-test-build process with each build improving on the previous delivery and/or adding additional capabilities.</p>							

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B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2007	FY 2008	FY 2009
USW-DSS Build 0.3 / 1 Development / Integration / Test	0.600	0.000	0.000
RDT&E Articles Quantity	0	0	0
Integrate and test additional USW-DSS tools/capabilities including Manual ASW Mission, Asset and Threat definition, Acoustic Performance Prediction Web Services, Improved Mission Planning including vulnerability analysis, improved ASW Search Planning/Performance Analysis and Mission Collaboration, and Improved Mission Monitoring and manual re-planning.			
FY06-07 - Continued development, integration, and testing of Build 1 for use as permanent Ship Alteration (SHIPALT) installation. Completed requirements analysis and design, interface definition, system specifications and security accreditation.			
FY07 - Installations of USW-DSS to commence mid FY07. Conduct development, integration, testing, and evaluation of Build 1 upgrades and correct deficiencies identified during Operational Assessments (OAs).			
	FY 2007	FY 2008	FY 2009
USW-DSS Build 2 Development / Integration / Test	3.100	0.900	0.500
RDT&E Articles Quantity	0	0	0
Integrate and test additional USW-DSS tools/capabilities, including Improved ASW track management, automated asset allocation, automated re-planning, battle management capabilities including engagement target pairing, cross platform data fusion, and improved theater USW capabilities. Incorporate visualization/display service currently demonstrated as Theater ASW Composeable FORCEnet (CFn) prototype.			
FY06 - Initiated Build 2 requirements analysis and system development efforts, including Operator-Machine Interface (OMI) design, environmental analysis capabilities, and embedded training. Conducted Fleet liaison.			
FY07-09 - Complete integration, testing, and evaluation of new functionality in USW-DSS incremental Build 2.0. Develop and implement upgrades based upon Operational Testing. Conduct development, integration, testing, and evaluation of Build2 upgrades and correct deficiencies identified during OAs.			
	FY 2007	FY 2008	FY 2009
USW-DSS Build 3 Development / Integration / Test	0.408	3.171	3.228
RDT&E Articles Quantity	0	0	0
Integrate and test additional USW-DSS tools/capabilities including improved integrated mission planning/execution tools, additional ASW track management improvement, improved situational awareness capabilities, improved data management including automated recommendations and extended use of intelligent agents, additional interfaces with tactical and environmental sensors, and MPRA ASW C2 toolset.			
FY07 - Initiated specification and architecture for USW-DSS Build 3.0.			
FY08/09 - Complete development, integration, and testing of USW-DSS incremental Build 3.0. Integrate USW-DSS with overall Navy FORCEnet framework.			

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	FY 2007	FY 2008	FY 2009	
Mission Planning Development	1.198	3.605	2.164	
RDT&E Articles Quantity	0	0	0	
Develop and test integrated mission planning tools, including necessary TDAs and C2 tools, to optimize the use of all available platform and distributed sensors. Develop multi-static TDAs/tools for enhanced detection and interference prevention. Develop asset allocation tools. Incorporate real-time sensor performance and develop common display standards for maximum information sharing. Provide Mission Planning capabilities/tools for integration into the appropriate USW-DSS incremental builds.				
	FY 2007	FY 2008	FY 2009	
ASW Track Management Development	0.000	4.700	2.200	
RDT&E Articles Quantity	0	0	0	
Develop C2 tools to support new automated No Attack (NOTACK) concepts. Establish new track structure which allows sharing of ASW "collaborative-level" contacts and includes amplifying contact information. Develop scaleable track sharing capabilities, including intermittent operations with submarines and Maritime and Patrol Reconnaissance Aircraft (MPRA). Develop an ASW threat prioritization and ASW target asset pairing TDA. Define and develop all sensor data fusion services. Provide capabilities for implementation into the appropriate USW-DSS incremental builds.				
	FY 2007	FY 2008	FY 2009	
Improved Situational Awareness Development	0.000	1.000	2.000	
RDT&E Articles Quantity	0	0	0	
Develop the necessary capabilities to exchange data between C2 and Combat Systems to support enhanced ASW situational awareness. Develop improved force planning and status tools to access database and systems to obtain the status of platforms and combat systems (fuel, weapon inventory, readiness, etc.). Incorporate this information into planning system models. Provide capabilities for implementation into the appropriate USW-DSS incremental builds.				
	FY 2007	FY 2008	FY 2009	
MPRA ASW C2 Toolset Development	0.000	1.500	1.500	
RDT&E Articles Quantity	0	0	0	
Develop a P-3/Multi-Mission Maritime Aircraft (MMA) C2 toolset to include an integrated USW-DSS capability with the P-3 Integrated Tactical Picture. Capabilities will include: Common Operational Picture (COP) collaboration toolset, track management, in-situ mission planning tools and initial interface with Joint Mission Planning System (JMPS). Provide capabilities for implementation into the appropriate USW-DSS incremental build.				

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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5	PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION	PROJECT NUMBER AND NAME 3094/USW Decision Support		
		FY 2007	FY 2008	FY 2009
Battle Management Capability Development		1.200	1.900	1.100
RDT&E Articles Quantity		0	0	0
Develop TDA/tools for the engagement phase of an operation. These capabilities will include asset allocation, dynamic vulnerability analysis, dynamic re-planning, rapid access to rules of engagement, engagement target pairing, cross platform data fusion, reconstruction, improved Geographic Information System (GIS) functionality, and environmental data ingest and analysis. Provide capabilities for implementation into the appropriate USW-DSS incremental build.				
		FY 2007	FY 2008	FY 2009
ISNS Integration		0.000	0.000	2.100
RDT&E Articles Quantity		0	0	0
Beginning in FY09, provide the required integration and testing for migration to the Integrated Shipboard Network System (ISNS) for surface platforms.				

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EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE February 2008			
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION					PROJECT NUMBER AND NAME 3094/USW Decision Support					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Primary H/W & S/W Development	C/CPFF	JHU/APL, MD	0.300	0.300	FEB-07	0.623	DEC-07	0.100	NOV-08	CONT	CONT	0.000
Primary H/W & S/W Development	WR	NAWC Patuxent River, MD	0.000	0.000		0.000		0.330	OCT-08	CONT	CONT	0.000
Primary H/W & S/W Development	WR	NAVSEA Carderock, MD	0.350	0.443	NOV-06	1.017	OCT-07	2.000	OCT-08	CONT	CONT	0.000
Primary H/W & S/W Development	WR	NAVSEA Keyport, WA	0.600	0.600	OCT-06	0.479	OCT-07	2.650	OCT-08	CONT	CONT	0.000
Primary H/W & S/W Development	WR	NAVSEA Newport, RI	1.900	2.033	OCT-06	4.899	OCT-07	4.420	OCT-08	CONT	CONT	0.000
Primary H/W & S/W Development	WR	SSC San Diego, CA	0.525	0.025	MAY-07	0.000		0.000		0.000	0.550	0.000
Primary H/W & S/W Development	WR	VAR, (*See Remark)	0.533	0.306	OCT-06	1.473	DEC-07	0.124	OCT-08	CONT	CONT	0.000
Primary H/W & S/W Development	C/CPFF	VAR, (*See Remark)	0.000	0.000		2.032	DEC-07	0.000		0.000	2.032	0.000
Primary H/W & S/W Development	C/CPFF	Progeny, CA	1.675	2.079	NOV-06	4.833	FEB-08	4.448	NOV-08	CONT	CONT	0.000
Subtotal Product Development			5.883	5.786		15.356		14.072		0.000	CONT	0.000
Remarks: * Consists of multiple performing activities with funding for each not greater than \$1 million per year.												
At-Sea Test and Evaluation	WR	VAR, VAR (*See Remark)	0.300	0.300	DEC-06	1.000	DEC-07	0.300	DEC-08	CONT	CONT	0.000
Subtotal Test and Evaluation			0.300	0.300		1.000		0.300		CONT	CONT	0.000
Remarks: * Consists of multiple performing activities with funding for each not greater than \$1 million per year.												
Program Management Support	C/CPAF	BAE Systems, MD	0.420	0.420	NOV-07	0.420	NOV-08	0.420	NOV-09	CONT	CONT	0.000
Subtotal Management Services			0.420	0.420		0.420		0.420		CONT	CONT	0.000
Remarks:												
Total Cost			6.603	6.506		16.776		14.792		0.000	CONT	0.000

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EXHIBIT R-4, SCHEDULE PROFILE

DATE

February 2008

APPROPRIATION/BUDGET ACTIVITY
RD TEN/BA 5

PROGRAM ELEMENT NUMBER AND NAME
0604518N/COMBAT INFORMATION CENTER CONVERSION

PROJECT NUMBER AND NAME
3094/USW Decision Support

Fiscal Year	2007				2008				2009				2010				2011				2012				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
Acquisition/Contract Milestones/Reviews					SW/HW Int. Contract via SBIR III																							
	Development Contracts																											
USW-DSS System Development (Builds 1/2/3/4)	Build 1								Build 2								Build 3								Build 4			
Test & Evaluation Milestones																												
USW-DSS At-Sea Tests (Builds 1/2/3/4)	Build 1 DT Assist								Build 1				Build 2 Operational Observation				Build 2 OT				Build 3				Build 4			
System Deliveries OPN BLI 2176 (N6F USW-DSS)					Build 1				Build 2				Build 3				Build 4											

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EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604518N/COMBAT INFORMATION CENTER CONVERSION			PROJECT NUMBER AND NAME 3094/USW Decision Support			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
USW-DSS Build 1 Complete		2Q						
USW-DSS DT Assist (lab-based) - Build 1		2Q						
USW-DSS Delivery to CSGs		3Q-4Q	1Q-4Q					
Contract Award - Build 2			2Q					
USW-DSS Build 2 Complete				1Q				
USW-DSS Delivery to CSGs				1Q-2Q				
USW-DSS Build 2 Delivery to CSGs				1Q-2Q	1Q-4Q			
USW-DSS At-Sea Test - Build 2				2Q-4Q				
USW-DSS Build 3 Complete						1Q		
USW-DSS At-Sea Test - Build 3						3Q-4Q		
USW-DSS Delivery to CSGs						1Q-2Q	1Q-4Q	
USW-DSS Delivery to CSG/non-CSG Platforms						1Q-2Q	1Q-4Q	
USW-DSS Build 4 Complete								1Q
USW-DSS Delivery to CSGs								1Q-2Q
USW-DSS Delivery to CSG/non-CSG Platforms								1Q-2Q
USW-DSS At-Sea Test - Build 4								3Q-4Q

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B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2007	FY 2008	FY 2009
Command and Control (C2) Web-Based Architecture	0.996	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07: The C2 Web-Based Architecture Congressional Add developed preliminary network accessible data services that can be used to gain a strategic advantage. This capability will serve threat/force information and other USW services on-demand to other participants in the network as independent services that are accessed in a standardized manner, providing more reliable, consistent data sets across programs with easier and timelier updates to data sets.			
	FY 2007	FY 2008	FY 2009
Environmentally Sealed, Ruggedized Large Scale Display for Tactical Ops	0.000	1.589	0.000
RDT&E Articles Quantity	0	0	0
FY08: The Environmentally Sealed, Ruggedized Large Scale Display for Tactical Operations Centers Congressional Add develops, tests, and delivers a production representative, environmentally sealed, 82-inch fan-less LED driven / DLP , SCRAMscreen polyplaner array display system for the USN ASW Dead-Reckoning Table program.			