

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 4					Combat Systems Integration 0603582N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY2007	Cost to Complete	Total Cost
Total PE Cost	76.800	54.461	42.915						Cont.	Cont.
Combat Systems Integration S0164	76.800	54.461	42.915						Cont.	Cont.
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>A. Mission Description and Budget Item Justification: COMNAVSEASYS COM (SEA 53) was assigned central responsibility for interoperability by CNO MSG DTG 021648Z May 1998 to develop policy and architecture for Battle Force warfare systems engineering, implement a common warfare systems engineering process and provide top level direction for fielding and support of balanced combat systems for ships and submarines. SEA 53 has responded with processes and tools to include: establishment of a force-level warfare systems engineering process, stewardship of the Fleet's deployment-minus-thirty months (D-30) configuration management process per CINCLANTFLT/CINCPACFLT Inst. 4720.3A, and force-level interoperability assessment efforts using the Distributed Engineering Plant (DEP) land-based testing tool.</p> <p>This project funds shore based testing and Combat System Integration Testing (CSIT) certification of integrated combat direction, weapon, sensor, and computing systems prior to their installation in operational fleet units. The operational computer systems are assembled and tested to assure proper configuration and interoperability in a test environment similar to their ultimate shipboard operational environment. Included is operational assessment testing of the integrated suite of computer programs. To support the Battle Group Interoperability (BGI) program, this project funds: Battle Group (BG)/Battle Force (BF) requirements engineering and analysis. BG/BF configuration management through the D-30 process and updates to the Surface Combat System Master Plan (SSCSMP) and Battle Group and Battle Force interoperability testing (BGIT/BFIT) which is a prerequisite for operational Certification of the battle group configuration prior to deployment. BGIT/BFIT Certification of deploying Battle Group configurations is accomplished through the utilization of the Navy's Distributed Engineering Plant (DEP), which provides operational configurations for all combat system configurations located at multiple Navy land-based sites located across the country and connected via ATM networking technology. The DEP provides the only opportunity for comprehensive interoperability testing of combat system and C4I configuration items prior to shipboard delivery for operational use in surface combatant platforms and battle group units.</p> <p>PROGRAM ACCOMPLISHMENT AND PLANS:</p> <p>1. (U) FY 00 ACCOMPLISHMENTS:</p> <p>(U) (9.4) Conducted Combat System Integration Testing (CSIT) of Advanced Combat Direction System (ACDS) of Block-1, level 2.1x, ACDS Block-0, level 10,24, Cooperative Engagement Capability (CEC) Baseline-1, and Combat Direction System (CDS) level 12/13 in CV/CVN, LHD, LHA-1, LHA-2, DD and FFG ship classes. Continued design and development of surface ship test beds to include networks for the CVN-68, CVN-76 and LPD-17 ships/classes. Continued planning for out-year Combat System Integration Testing (CSIT) to include Common Scenario/Common Environment (CSCE) Simulation, test bed procedures design and development.</p>										

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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 4	R-1 ITEM NOMENCLATURE Combat Systems Integration 0603582N	
<p>(U) (\$22.085) Conducted Battle Group Interoperability Testing (BGIT) in USS ABRAHAM LINCOLN, USS GEORGE WASHINGTON, USS ENTERPRISE, USS CONSTELLATION, USS HARRY S. TRUMAN, and USS ARL VINSON Carrier Battle Groups (CVBGs). Developed the test plans and test procedures to support Certification of surface ship class combat systems, C4ISR systems and Battle Group Interoperability (BGI). Prepared test beds at the Distributed Engineering Plant (DEP) to support Battle Group Interoperability Testing (BGIT) for up to six Carrier Battle Group (CVBGs).</p> <p>(U) (\$4.8) Continued execution of the Fleet's D-30 Process including: Battle Force Action Officer (BFAO) efforts, BG Change Control Process, Land Based Triage, BG Capabilities and Limitations Report and engineering assessments. Continued SSCSMP updates.</p> <p>(U) (\$9.0) Continued Warfare Systems Engineering Requirements development. Conducted BG related systems engineering efforts to include Analysis of Alternatives (AOA). Continued to establish System Engineering Teams (SETs). Continued to develop Design Reference Mission (DRM) to communicate requirements in their operational context, and produced Warfare Area Layouts as integrated program plans for introducing new capability.</p> <p>(U) (\$1.989) COTS BMP - Funds assessment of potential application of COTS technology to resolve Fleet configuration management problems.</p> <p>(U) (\$29.195) Common Command and Decision** (U) (\$2.081) Transition PMS 468 Program Office (U) (\$1.287) Conducted Risk Mitigation Demonstrations (U) (\$0.750) Initiated FAST TRACK SBIR for Middleware Portability (U) (\$1.085) Procured Enterprise-wide System Engineering Collaborative tools for Lockheed Martin , Raytheon, Digital System Resources(DSR), and NSWC DD (U) (\$1.025) Conducted root cause analysis of All Service Combatant ID Evaluation Test (ASCIET) data (U) (\$12.500) Initiated Battle Group Domain Analysis Engineering (U) (\$10.467) Developed Technical Specifications, Cost Estimates and Acquisition Documentation</p> <p>**Funding for Common C&D will be under Program Element 0604518N for FY 02 and out.</p> <p>2. (U) FY01 PLAN:</p> <p>(U) (\$9.731) Conduct Combat System Integration Testing (CSIT) of Advanced Combat Direction System (ACDS) Block-0, Level 10.25, Block-1 upgrades, Command and Control Processor (C2P) upgrades, Cooperative Engagement Capability (CEC) Baseline-2, Ship Self Defense System (SSDS) MK-2, Mod 0 in CV/CVN, LHD, and LHA ship classes. Continue design and development of surface ship test beds to include networks for the CVN-76 and CV/LHD SSDS MK-2, Mod 1 backfit classes. Continue planning for out-year Combat System Integration Testing (CSIT), including Common Scenario/Common Environment (CSCE) Simulation, test bed and test procedures design and development. Continue SSCSMP updates.</p>		

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	JUNE 2001
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 4	Combat Systems Integration 0603582N	
<p>(U) (\$11.929) Provide Distributed Engineering Plant (DEP) Testbed to support land based testing of complex computer program configurations for the battleforce. Conduct Battle Group Interoperability Testing (BGIT) for JOHN F. KENNEDY, JOHN C. STENNIS, THEODORE ROOSEVELT Battle Groups. Conduct Collaborative Systems Test (CST) for JOHN F. KENNEDY Battle Group in support of CEC OPEVAL. Conduct Interoperability Systems Engineering Tests (ISETs) for root cause determination. of key interoperability trouble report observations.</p> <p>(U) (\$6.256) Continue execution of D-30 Process for all Battle Groups in the deployment cycle, including: BFAO efforts, BG Change Control Process, Land Based Triage, BG Capabilities and Limitations Report and Engineering assessments. Continue configuration management for all battle groups. Support AMPS website and and Electronic Configuration Control Board (ECCB).</p> <p>(U) (\$4.082) Continue Warfare Systems Engineering Requirements development. Conduct BG related systems engineering efforts to include Analysis of Alternatives (AOA). Continue to establish System Engineering Teams (SETs). Continue to develop Design Reference Mission (DRM) to communicate requirements in their operational context, and produce Warfare Area Layouts as integrated program plans for introducing new capability.</p> <p>(U) (\$19.522) Common Command and Decision** (U) (\$14.205) Continue Design Engineering. (U) (\$2.389) Continue Acquisition Management Support. (U) (\$2.928) Continue Technical Management Support.</p> <p>**Continued funding for Common C&D will be provided under Program Element 0604518N for FY 02 and out.</p> <p>(U) (\$1.996) Development of optically multiplexed wideband radar beamfinder.</p> <p>(U) (\$0.945) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>3. (U) FY02 PLAN:</p> <p>(U) (\$9.613) Conduct Combat System Integration Testing (CSIT) of Advanced Combat Direction System (ACDS) Block-0, level 10.24.X, ACDS Block-1 2.1.X, Combat Direction System (CDS) level 12.X/13.X in CV/CVN, LSD, and LHD ship classes, SSDS MK-2, Mod 2, and Command and Control Processor (C2P) upgrade. Continue planning for out-year Combat System Integration Testing (CSIT). Continue SSCMP updates.</p> <p>(U) (\$18.177) Provide Distributed Engineering Plant (DEP) Testbed to support land based testing of complex computer program configurations for the battleforce. Conduct Battle Group Interoperability Testing (BGIT) for LINCOLN/GEORGE WASHINGTON/KITTY HAWK, NIMITZ, TRUMAN Battle Groups. Conduct Interoperability Systems Engineering Tests (ISETs) for root cause determination of key interoperability trouble report observation.</p> <p>(U) (\$6.228) Continue execution of D-30 Process for all Battle Groups in the deployment cycle, including: BFAO efforts, BG Change Control Process, Land Based Triage, BG Capabilities and Limitations Report and Engineering assessments. Continue configuration management for all battle groups. Support AMPS website and and Electronic Configuration Control Board (ECCB).</p>		

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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 4	R-1 ITEM NOMENCLATURE Combat Systems Integration 0603582N	
<p>(U) (\$3.954) Continue Warfare Systems Engineering Requirements development. Conduct BG related systems engineering efforts to include Analysis of Alternatives (AOA). Continue to establish System Engineering Teams (SETs). Continue to develop Design Reference Mission (DRM) to communicate requirements in their operational context, and produce Warfare Area Layouts as integrated program plans for introducing new capability.</p> <p>(U) (\$4.943) Fund Navy participation in Joint Distributed Engineering Plant (JDEP).</p>		

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		JUNE 2001	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5	Combat Systems Integration 0603582N		
B. Program Change Summary:			
	FY2000	FY2001	FY2002
FY 2001 President's Budget:	78.305	32.966	38.054
Appropriated Value:	78.740	32.966	
Adjustment to FY 2000/2001 Appropriated Value/ FY2001 President's Budget:	-1.94	21.495	4.861
FY 2002 PRES Budget Submit:	76.800	54.461	42.915
<u>Funding:</u>			
FY2000: Decrease for Congressional Undistributed (-\$1,807, and minor pricing adjustments of (-\$.133)			
FY 2001: Decrease for Congressional Undistributed (-\$.505). Congressional increases for CC&D (+\$20.000), and Optical Multiplex Wideband Radar Beamfinder (+\$2.0).			
FY2002: Decreases due to Common C&D transfer (-\$13.700), Battle Force Interoperability Certification Program (+\$14.100), Joint Distr Eng (+\$5.000), and minor pricing adjustments (-\$.539)			
<u>Schedule:</u> Not Applicable			
<u>Technical:</u> Not Applicable			
C. Other Program Funding Summary: Not applicable.			
Related RDT&E: Computer programs developed under these programs are tested in their integrated configuration.			
PE 0204571N (Consolidated Training Systems Development)			
PE 0205620N (Surface ASW Combat System Technology)			
PE 0603382N (Advanced Combat System Technology)			
PE 0603755N (Ship Self Defense)			
PE 0603852N (Cooperative Engagement Capability)			
PE 0604307N (AEGIS Combat Systems Engineering)			
PE 0604755N (Ship Self Defense)			
PE 0604518N (CIC Conversion/Common Command and Decision)			
PE 0603879N (Single Integrated Air Picture (SIAP))			
Acquisition Strategy: Not applicable.			
D. Schedule Profile: Not applicable.			

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Exhibit R-3 Cost Analysis										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			0603582N			Combat Systems Integration						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Combat Sys Integ Testing/SQI	WR/RC	NSWC PHD	7.500	8.200	VAR	6.000	VAR	4.646	VAR	Cont.	Cont	
Combat Sys Integ Testing/SQI	WR/RC	NSWC DD	0.000									
Combat Sys Integ Testing/SQI	WR/RC	VARIOUS	0.500	0.600		0.345		0.320		Cont.	Cont	
D-30 Process	WR/RC	NSWC PHD	3.500	4.100	VAR	4.400	VAR	4.792	VAR	Cont.	Cont	
D-30 Process	WR/RC	NSWC DD								N/A		
D-30 Process	WR/RC/PD	VARIOUS	0.100	0.150		0.160		0.108	VAR	Cont.	Cont	
DEP/BGIT Cert/Triage	WR/RC	NSWC PHD										
DEP/BGIT Cert/Triage	WR/RC	NSWC DD	13.202	16.601		9.225		17.149		Cont.	Cont	
DEP/BGIT Cert/Triage	WR/RC/PD	VARIOUS	1.220	2.332		0.713		3.644	VAR	Cont.	Cont	
Optical Multi-plex Wideband Radar	WR/RC	NSWC CRANE		1.989		1.996						
Warfare Sys Engineering	WR/RC	NSWC DD	1.700	2.000		1.000		1.022		Cont.	Cont	
Warfare Sys Engineering	WR/RC/PD	VARIOUS	2.900	2.228		1.950		1.841		Cont.	Cont	
Common C&D	WR/RC	NSWC DD	0.000	5.000		5.000		N/A				
Common C&D Contract Support	VARIOUS	VARIOUS	0.000	24.362		14.522		N/A				
Contract Engineering Support	VARIOUS	VARIOUS	5.936	6.806	VAR	6.045		7.243	VAR	Cont.	Cont	
Contract Program Mgt Support	VARIOUS	VARIOUS	0.854	1.162		2.000		2.050				
Travel		NAVSEA TRAVEL	0.080	0.205		0.160		0.100		Cont.	Cont	
SBIR Assessment	VARIOUS	VARIOUS		1.065		0.945						
Subtotal Product Development			37.492	76.800		54.461		42.915		Cont.	Cont	
Remarks:												
Total Cost			37.492	76.800		54.461		42.915		Cont.	Cont	
Remarks:												

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