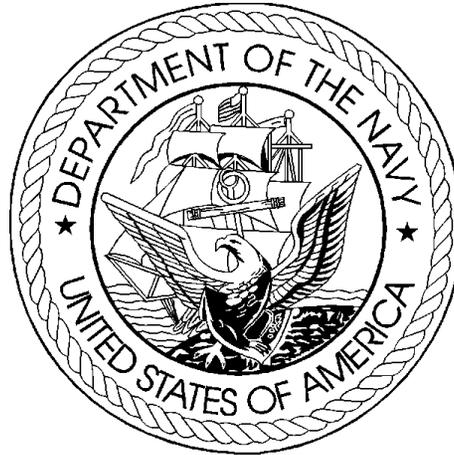


DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2003
BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES
FEBRUARY 2002

RESEARCH, DEVELOPMENT, TEST &
EVALUATION, NAVY
BUDGET ACTIVITY 5

UNCLASSIFIED

Department of the Navy
FY 2003 RDT&E Program

Exhibit R-1

APPROPRIATION: 1319n Research, Development, Test and Evaluation, Navy

DATE: February 2002

Line Number	R-1 Program Element Number	Item Nomenclature	Thousands of Dollars				Security Classification
			Budget Activity	FY 2001	FY 2002	FY 2003	
93			5				
96	0604215N	Standards Development	5	99.515	69.016	37.757	U
97	0604216N	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	5	78.386	150.600	88.969	U
98	0604217N	S-3 WEAPON SYSTEM IMPROVEMENT	5	0.435	0.424	0.422	U
99	0604218N	AIR/OCEAN EQUIPMENT ENGINEERING	5	5.789	6.290	5.725	U
100	0604221N	P-3 MODERNIZATION PROGRAM	5	7.123	3.192	2.348	U
101	0604231N	TACTICAL COMMAND SYSTEM	5	57.599	63.269	81.475	U
102	0604234N	E-2C Radar Modernization Program	5	0.000	78.152	113.681	U
103	0604245N	H-1 UPGRADES	5	133.324	170.448	241.384	U
104	0604261N	ACOUSTIC SEARCH SENSORS	5	19.022	16.676	13.929	U
105	0604262N	V-22A	5	217.925	442.787	420.109	U
106	0604264N	AIR CREW SYSTEMS DEVELOPMENT	5	17.904	15.380	6.695	U
107	0604270N	EW Development	5	130.004	117.723	74.742	U
108	0604280N	(PENDING PE) JTRS-M/F	5	0.000	0.000	20.373	U
109	0604300N	SC-21 Total Ship System Engineering	5	286.444	235.235	717.397	U
110	0604307N	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	5	184.843	326.625	300.748	U
111	0604311N	LPD 17 CLASS SYSTEMS DEVELOPMENT	5	0.236	0.992	10.133	U
112	0604312N	TRI-SERVICE STANDOFF ATTACK MISSILE	5	1.987	1.929	14.943	U
113	0604329N	(Pending PE) Small Diameter Bomb (SDB)	5	0.000	0.000	1.989	U
114	0604366N	Standard Missile Improvements	5	0.525	13.984	16.288	U
115	0604373N	AIRBORNE MCM	5	49.573	61.097	67.240	U
116	0604503N	SSN-688 AND TRIDENT MODERNIZATION	5	69.685	64.547	98.516	U
117	0604504N	Air Control	5	13.793	12.708	4.951	U
118	0604507N	Enhanced Modular Signal Processor	5	0.833	1.004	0.513	U
119	0604512N	SHIPBOARD AVIATION SYSTEMS	5	10.544	17.965	24.619	U
120	0604518N	COMBAT INFORMATION CENTER CONVERSION	5	7.524	5.344	0.000	U
121	0604524N	SUBMARINE COMBAT SYSTEM	5	3.492	0.000	0.000	U
122	0604558N	NEW DESIGN SSN	5	207.395	204.667	238.253	U
123	0604561N	SSN-21 DEVELOPMENTS	5	6.322	5.711	3.981	U
124	0604562N	SUBMARINE TACTICAL WARFARE SYSTEM	5	25.435	38.884	13.975	U
125	0604567N	SHIP CONTRACT DESIGN/ LIVE FIRE T&E	5	78.624	142.848	184.545	U
126	0604574N	NAVY TACTICAL COMPUTER RESOURCES	5	29.828	39.696	2.185	U
127	0604601N	MINE DEVELOPMENT	5	1.582	0.000	1.491	U
128	0604603N	UNGUIDED CONVENTIONAL AIR-LAUNCHED WEAPON	5	6.254	17.038	12.142	U
129	0604610N	Lightweight Torpedo Development	5	9.041	10.219	7.769	U
130	0604618N	Joint Direct Attack Munition	5	28.066	55.767	48.861	U
131	0604654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	5	6.606	8.051	7.781	U
132	0604703N	Personnel, Trng, Simulation & Human Factors	5	1.234	1.289	1.331	U
133	0604710N	NAVY ENERGY PROGRAM	5	5.015	3.129	5.691	U
134	0604721N	BATTLE GROUP PASSIVE HORIZON EXTENSION	5	2.189	7.067	14.070	U
135	0604727N	Joint Standoff Weapon Systems	5	26.653	26.615	16.652	U
136	0604755N	SHIP SELF DEFENSE - EMD	5	113.237	63.407	61.966	U
137	0604756N	Ship Self Defense (Engage: Hard Kill)	5	0.000	33.234	19.528	U
138	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	5	0.000	41.301	28.064	U
139	0604771N	MEDICAL DEVELOPMENT	5	26.189	23.050	7.154	U
140	0604777N	Navigation/ID System	5	17.300	23.673	46.618	U
141	0604784N	DISTRIBUTED SURVEILLANCE SYSTEM	5	30.089	42.334	35.861	U
142	0604800N	JOINT STRIKE FIGHTER (JSF) - EMD	5	0.000	762.957	1,727.500	U
143	0604910N	Smart Card Dev/Mod	5	1.172	0.888	0.711	U
144	0605013M	Marine Corps IT Dev/Mod	5	6.835	10.934	8.079	U
145	0605013N	Navy IT Dev/Mod	5	38.580	59.944	43.213	U
146	0605014N	Information Technology Development	5	0.000	46.767	51.297	U
147	0605015N	Joint Military Intelligence Programs (JMIP)	5	0.000	5.947	2.337	U
148	0605500N	Multi-Mission Maritime Aircraft	5	0.000	53.329	74.531	U
149	0508713N	Navy Standard Integrated Personnel System	5	5.653	12.966	12.798	U
Total Engineering and Manufacturing Development				2,144.556	3,728.241	5,093.018	

UNCLASSIFIED

Department of the Navy
 FY 2003 RDT&E Program
 Alphabetic Listing

Exhibit R-1

APPROPRIATION: 1319n Research, Development, Test and Evaluation, Navy

DATE: February 2002

Line Number	R-1 Element Number	Program Element Item Nomenclature	Thousands of Dollars			Security Classification	
			Budget Activity	FY 2001	FY 2002		FY 2003
108	0604280N	(PENDING PE) JTRS-M/F	5	0.000	0.000	20.373	U
113	0604329N	(Pending PE) Small Diameter Bomb (SDB)	5	0.000	0.000	1.989	U
104	0604261N	ACOUSTIC SEARCH SENSORS	5	19.022	16.676	13.929	U
117	0604504N	Air Control	5	13.793	12.708	4.951	U
106	0604264N	AIR CREW SYSTEMS DEVELOPMENT	5	17.904	15.380	6.695	U
99	0604218N	AIR/OCEAN EQUIPMENT ENGINEERING	5	5.789	6.290	5.725	U
115	0604373N	AIRBORNE MCM	5	49.573	61.097	67.240	U
95	0604214N	AV-8B AIRCRAFT - ENG DEV	5	28.134	30.723	18.565	U
134	0604721N	BATTLE GROUP PASSIVE HORIZON EXTENSION	5	2.189	7.067	14.070	U
120	0604518N	COMBAT INFORMATION CENTER CONVERSION	5	7.524	5.344	0.000	U
141	0604784N	DISTRIBUTED SURVEILLANCE SYSTEM	5	30.089	42.334	35.861	U
102	0604234N	E-2C Radar Modernization Program	5	0.000	78.152	113.681	U
118	0604507N	Enhanced Modular Signal Processor	5	0.833	1.004	0.513	U
107	0604270N	EW Development	5	130.004	117.723	74.742	U
103	0604245N	H-1 UPGRADES	5	133.324	170.448	241.384	U
146	0605014N	Information Technology Development	5	0.000	46.767	51.297	U
130	0604618N	Joint Direct Attack Munition	5	28.066	55.767	48.861	U
147	0605015N	Joint Military Intelligence Programs (JMIP)	5	0.000	5.947	2.337	U
131	0604654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	5	6.606	8.051	7.781	U
135	0604727N	Joint Standoff Weapon Systems	5	26.653	26.615	16.652	U
142	0604800N	JOINT STRIKE FIGHTER (JSF) - EMD	5	0.000	762.957	1,727.500	U
129	0604610N	Lightweight Torpedo Development	5	9.041	10.219	7.769	U
111	0604311N	LPD 17 CLASS SYSTEMS DEVELOPMENT	5	0.236	0.992	10.133	U
144	0605013M	Marine Corps IT Dev/Mod	5	6.835	10.934	8.079	U
139	0604771N	MEDICAL DEVELOPMENT	5	26.189	23.050	7.154	U
127	0604601N	MINE DEVELOPMENT	5	1.582	0.000	1.491	U
97	0604216N	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	5	78.386	150.600	88.969	U
148	0605500N	Multi-Mission Maritime Aircraft	5	0.000	53.329	74.531	U
140	0604777N	Navigation/ID System	5	17.300	23.673	46.618	U
133	0604710N	NAVY ENERGY PROGRAM	5	5.015	3.129	5.691	U
145	0605013N	Navy IT Dev/Mod	5	38.580	59.944	43.213	U
149	0508713N	Navy Standard Integrated Personnel System	5	5.653	12.966	12.798	U
126	0604574N	NAVY TACTICAL COMPUTER RESOURCES	5	29.828	39.696	2.185	U
122	0604558N	NEW DESIGN SSN	5	207.395	204.667	238.253	U
94	0604212N	OTHER HELO DEVELOPMENT	5	46.618	80.419	31.123	U
100	0604221N	P-3 MODERNIZATION PROGRAM	5	7.123	3.192	2.348	U
132	0604703N	Personnel, Trng, Simulation & Human Factors	5	1.234	1.289	1.331	U
98	0604217N	S-3 WEAPON SYSTEM IMPROVEMENT	5	0.435	0.424	0.422	U
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137	0604756N	Ship Self Defense (Engage: Hard Kill)	5	0.000	33.234	19.528	U
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119	0604512N	SHIPBOARD AVIATION SYSTEMS	5	10.544	17.965	24.619	U
143	0604910N	Smart Card Dev/Mod	5	1.172	0.888	0.711	U
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96	0604215N	Standards Development	5	99.515	69.016	37.757	U
121	0604524N	SUBMARINE COMBAT SYSTEM	5	3.492	0.000	0.000	U
124	0604562N	SUBMARINE TACTICAL WARFARE SYSTEM	5	25.435	38.884	13.975	U
110	0604307N	SURFACE COMBATANT COMBAT SYSTEM ENGINE	5	184.843	326.625	300.748	U
101	0604231N	TACTICAL COMMAND SYSTEM	5	57.599	63.269	81.475	U
112	0604312N	TRI-SERVICE STANDOFF ATTACK MISSILE	5	1.987	1.929	14.943	U
128	0604603N	UNGUIDED CONVENTIONAL AIR-LAUNCHED WEAPON	5	6.254	17.038	12.142	U
105	0604262N	V-22A	5	217.925	442.787	420.109	U
93			5				
Total Engineering and Manufacturing Development				2,144.556	3,728.241	5,093.018	

**Fiscal Year 2003 Budget Estimates
Budget Appendix Extract Language**

**RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY
(RDTEN)**

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, [\$11,498,506,000] \$12,501,630,000, to remain available for obligation until September 30, [2003] 2004: *Provided, That funds appropriated in this paragraph which are available for the V-22 may be used to meet unique operational requirements of the Special Operations Forces. (10 U.S.C. 174, 2352-54, 7522; Department of Defense Appropriations Act, 2002; additional authorizing legislation required.)*

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604212N ASW & OTHER HELO DEVELOPMENT					
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			46.618	82.951	31.123	32.082	173.401	397.094	476.834	Continuing	Continuing
H1109 CH/MH-53			0.450	2.300	2.910	2.870	2.485	2.524	2.569	Continuing	Continuing
H2415 MH-60S DEVELOPMENT			30.807	41.721	23.241	20.158	13.056	11.987	6.198	Continuing	Continuing
H2463 LAMPS MK III DATA LINK	13.225		11.597	24.901							49.723
H3058 VH-XX Replacement					1.989	4.079	45.670	78.301	127.655	Continuing	Continuing
DERF (non-add)*					1.500						Continuing
H3059 CH-53E SLEP					2.983	4.975	112.190	304.282	340.412	Continuing	Continuing
H3060 IMDS			3.764	6.938							10.702
H9055 SH-60 LASER AIM SCORING SYSTEM				0.991							0.991
H9056 HIGH TECH TRAINING (LEGACY)				0.991							0.991
H9057 H-60 FLIR Mount				2.532							2.600
H9058 H-60 HELICOPTER DYNAMIC COMPONENT				2.577							2.577
Quantity of RDT&E Articles	2			10							12
<p>*FY2003 DERF funding augments project H3058 VHXX Replacement</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>H1109 - From FY-2000 to FY-2007, H-53E efforts continue to develop and qualify components to replace obsolete system components and incorporate supportability improvement modifications to support H-53E Service Life Extension Program (SLEP) Phase II and Phase III requirements. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator (MFS) will be utilized to develop, install and test interim modifications to existing H-53E legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete electromagnetic vulnerability (EMV) assessment will be required for the affected and/or modified systems. During FY-2003, RDT&E efforts will focus on risk reduction measures for the CH-53E Service Life Extension/Modernization Program. Consideration will be given but not limited to risk reduction efforts in identification and selection of candidate engines, refinement of the cost model, survivability improvements, avionics and cockpit enhancements, external/internal cargo handling improvements, airframe specific improvements to extend the service life to 2025 and main rotor head and main rotor blade redesign.</p> <p>H2415 - The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p>											

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /	BA-5	R-1 ITEM NOMENCLATURE 0604212N ASW & OTHER HELO DEVELOPMENT
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION (CON'T):</p> <p>H2463 - The Light Airborne Multi-Purpose System (LAMPS) MK III helicopter is deployed on Ticonderoga Class cruisers, Arleigh Burke Class Destroyer and Spruance Class destroyers, and Oliver Hazard Perry Class frigates and provides an all-weather capability for detection, classification, and localization of ships and submarines. LAMPS is an integrated ship-to-helicopter, computer-to-computer weapon system designed to increase and extend the effectiveness of the surface combatant in the performance of its mission. Currently the LAMPS helicopter is tied to its host surface ship via a C-Band bi-directional data link. This data link transfers FLIR, radar, Electronic Support Measures (ESM), Identification Friend or Foe (IFF), voice, tactical symbology, and acoustic information between the helicopter and ship making the helicopter an extension of the ships sensors and increasing the sensor horizon of the ship. The recent introduction of Cooperative Engagement Capability (CEC) into the fleet has created an Electro Magnetic Interference (EMI) problem because it operates within the same C-Band frequency spectrum as the data link. In some CEC operating modes, it completely masks the LAMPS data link resulting in loss of information exchange between the ship and helicopter. To resolve this EMI issue, the LAMPS data link is being moved from the C-Band frequency to the KU-Band. Funding supports development and delivery of 5 air and 4 surface test articles in FY 02.</p> <p>H3058 - Research and Development funds will be utilized to standup the Integrated Product Team (IPT) and produce requisite products required to meet the White House's requirement for an Executive Transport Platform. The following areas need to be explored: Nuclear Effects, E3 /TEMPEST certification requirements, Survivability (Vulnerability/Susceptibility), Facilities upgrade/modifications- Source Selection Authority (SSA), Environmental Impact, Security, Cost Estimation, Requirements Analysis, Functional Analysis and Allocation, Risk Management, Crew System/Human Systems Integration (HSI), and Logistics Support Analysis.</p> <p>H3059 - The Modernized CH-53E will be the U.S. Marine Corps' heavy lift aircraft through 2025. Current research and operational analysis indicates that the Marine Corps' need for heavy lift capability is increasing. Accordingly, the Modernized CH-53E will be capable of lifting large, mission representative external and internal loads to complement the range and speed of the MV-22 in Operational Maneuver From The Sea and the execution of our national military strategy. Research and Development funds will be used to start risk reduction measures which will include trade studies, cost modeling, the development of programmatic, engineering and logistics infrastructure; and the development of operational requirements documents and all acquisition efforts associated with an ACAT I program.</p> <p>H3060 - Integrated Mechanical Diagnostics System (IMDS) adapts a BFGoodrich (BFG) Aerospace commercial mechanical diagnostic system for military use, and integrates and tests the system on the H-53 and H-60 helicopters. This health and usage monitoring system will reduce operational and support costs, improve operational readiness, and increase flight safety through the early identification and correction of degraded components in the engine, drive train, and rotor systems of the helicopter. IMDS provides continuous onboard monitoring and diagnostics of engine health, gearbox and drive train vibrations, oil debris, and rotor track and balance. This new development effort continues the ongoing COSSI initiative, and is required to support completion of the Navy-specific efforts associated with the IMDS program.</p> <p>H9055 - The Laser Aim Scoring System (LASS) provides real-time, quantitative feedback on critical aspects of laser guided weapon employment not currently available from existing Navy laser scoring systems. This feedback has been proven to significantly improve flight crew weapon delivery capabilities during nearly a decade of use by the U. S. Army. The system consists of three major components: A Base Station, Target Kit and aircraft Flight Data Unit. LASS will be adapted to existing Navy seaborne targets to support Navy H-60 armed helicopter raining and readiness events requiring laser scoring capability.</p> <p>H9056 - High Tech Training In Support Of DOD Legacy Parts.</p> <p>H9057- H-60 FLIR Mount, Congressional Add.</p> <p>H9058 - H-60 Dynamic Component Life Cycle Engineering Evaluation to assess criteria and development of component upgrades for Life Extension.</p> <p>This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>		

R-1 SHOPPING LIST - Item No. 94

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME H1109 CH/MH-53					
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			0.450	2.300	2.910	2.870	2.485	2.524	2.569	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: From FY-2000 to FY-2007, H-53E efforts continue to develop and qualify components to replace obsolete system components and incorporate supportability improvement modifications to support H-53E Service Life Extension Program (SLEP) Phase II and Phase III requirements. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator (MFS) will be utilized to develop, install and test interim modifications to existing H-53E legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete electromagnetic vulnerability (EMV) assessment will be required for the affected and/or modified systems. During FY-2003 RDT&E efforts will focus on risk reduction measures for the CH-53E Service Life Extension/Modernization Program. Consideration will be given but not limited to risk reduction efforts in identification and selection of candidate engines, refinement of the cost model, survivability improvements, avionics and cockpit enhancements, external/internal cargo handling improvements, airframe specific improvements to extend the service life to 2025 and main rotor head and main rotor blade redesign.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$.184) Continued In-house travel and field activities funding to support program.
- (U) (\$.266) Continued H-53 Avionics Obsolescence/Updated Cockpit. This included a cockpit study on the layout development, human factors of component layout and component commonality.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53
<p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.352) Conduct External Cargo Handling System Design.- (U) (\$.350) Conduct External Cargo System Indicator Design.- (U) (\$.350) Conduct Aircraft Survivability Assessment.- (U) (\$.250) Conduct Armor Threat Assessment on aircraft.- (U) (\$.330) Conduct Armor Selection/Test.- (U) (\$.269) Conduct Cockpit and Aircraft System Assessment.- (U) (\$.227) Testing other Aircraft Integration Candidates to include Helmut Displays, Cockpit Displays, and Heads Up Displays.- (U) (\$.102) Continue In-house travel and field activities funding to support program.- (U) (\$.070) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.112) Continue In-house travel and field activities funding to support program.- (U) (\$.750) Design ballistic vulnerability (armor) package.- (U) (\$.139) Conduct cockpit architecture design to facility communication, navigation upgrades/modifications.- (U) (\$ 1.359) Conduct detailed cockpit design and bread board testing.- (U) (\$.150) Integrate software applique for cockpit and avionics improvements, to include the development of new sensors and the impact on flight control computers.- (U) (\$.150) Select and test antenna and other electronic components.- (U) (\$.250) Model and test survivability design effectiveness.		

R-1 SHOPPING LIST - Item No. 94

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">(U) FY 2002 President's Budget:</td> <td style="text-align: center;">0.461</td> <td style="text-align: center;">2.321</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.011</td> <td style="text-align: center;">-0.021</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">0.450</td> <td style="text-align: center;">2.300</td> <td style="text-align: center;">2.910</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 40px;">(U) Funding: The FY 2001 decrease of \$.011 million is due to an decrease of \$.008 million for a Small Business Innovation Research Assessment and a decrease of \$.003 million for reprioritization of requirements within the Navy. The FY2002 decrease of \$.021 million is due to an undistributed congressional reduction.</p> <p style="margin-left: 40px;">(U) Schedule: Not Applicable.</p> <p style="margin-left: 40px;">(U) Technical: Not Applicable.</p> <p style="margin-top: 40px;">(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	0.461	2.321		(U) Adjustments from the President's Budget:	-0.011	-0.021		(U) FY 2003 President's Budget Submit:	0.450	2.300	2.910
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:	0.461	2.321																
(U) Adjustments from the President's Budget:	-0.011	-0.021																
(U) FY 2003 President's Budget Submit:	0.450	2.300	2.910															

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			February 2002	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53		
(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY-2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones (Not Applicable)				
(U) Engineering Milestones	1Q/01-4Q/01 H-53E Develop & Qualify Component	1Q/02-4Q/02 External Cargo Handling Sys Design 1Q/02-4Q/02 Ext Cargo Handling Indicator Design 1Q/02-4Q/02 Aircraft Survivability Assessment 1Q/02-4Q/02 Armor Threat Assessment 1Q/02-4Q/02 Cockpit and A/C System Assessment 1Q/02-4Q/02 Other A/C Cockpit Integration Candidates	1Q/03-4Q/03 Design Armor Package 1Q/03-4Q/03 Cockpit Upgrade Architecture Sel	1Q/04-4Q/04 Mission Planning Station Dev 1Q/04-4Q/04 Mission Planning Data Integration 1Q/05-4Q/05 Modernize Defensive Weapon System 1Q/05-4Q/05 Weapons Sys Research Structural Interface Rqmts 1Q/06-4Q/06 Alternate Internal Power Supply Study 1Q/06-4Q/06 Daylight Compat. Head Up Display (HUD) Ass. 1Q/06-4Q/06 Internal Cabin Floor Load Assessment 1Q/06-4Q/06 Composite Main Rotor Blade Assess. 1Q/07-4Q/07 Daylight Compat. Head Up Display (HUD) Design 1Q/07-4Q/07 Composite Main Rotor Blade Design
(U) T&E Milestones		1Q/02-4Q/02 Armor Selection Test	1Q/03-4Q/03 Model and Test survivability Design Effectiveness 1Q/03-4Q/03 Cockpit Upgrade Detailed Design & Breadboard Testing	1Q/04-4Q/04 Cockpit Upgrade

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53		
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) T&E Milestones (Continued)			1Q/03-4Q/04 Integrate Cockpit/Avionics Software Applique 1Q/03-4Q/04 Select & Test Antennae, AMP & Modem	
(U) Contract Milestones				

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & OTHER HELO DEVELOPMENT			H1109 CH/MH-53E						
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
External Cargo Handling System	SS CPFF	SIKORSKY, Stratford, CT				0.352	03/02				0.352	0.352
External Cargo System Indicator Des	SS CPFF	SIKORSKY, Stratford, CT				0.350	03/02				0.350	0.350
Design Armor Package	SS CPFF	SIKORSKY, Stratford, CT						0.750	02/04		0.750	0.750
Integrated Software Applique	WX	NAWCAD, Pax River, MD						0.150	12/03		0.150	
Architecture Selection	WX	NAWCAD, Pax River, MD						0.139	12/03		0.139	
IELD	WX	NAWCAD, Pax River, MD	1.869								1.869	
Subtotal Product Development			1.869			0.702		1.039			3.610	
Remarks:												
H-53 Avionics Obsolescence	WX	NAVICP, Philadelphia, PA	0.535	0.266	11/00						0.801	
Aircraft Survivability Assessment	SS CPFF	SIKORSKY, Stratford, CT				0.350	03/02				0.350	0.350
Aircraft Integration Candidates	WX	NAWCAD, Pax River, MD				0.227	10/01				0.227	
Cockpit & Aircraft Sys Assessment	WX	NAWCAD, Pax River, MD				0.269	10/01				0.269	
Armor Threat Assessment	WX	NAWCAD, Pax River, MD				0.250	10/01				0.250	
Modeling Fidelity & Data Correlation	WX	NSWC, Carderock, MD	0.150								0.150	
Subtotal Support			0.685	0.266		1.096					2.047	
Remarks:												

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Exhibit R-2a, RD TEN Budget Item Justification
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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & OTHER HELO DEVELOPMENT			H1109 CH/MH-53						
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
Armor Selection Testing	WX	NAWCAD, Pax River, MD				0.330	10/01				0.330	
Design & Breadboard Testing	WX	NAWCAD, Pax River, MD						1.359	11/03		1.359	
Testing Antennae, AMP & Modem	WX	NAWCAD, Pax River, MD						0.150	01/04		0.150	
Model & Test Design Effectiveness	WX	NAWCAD, Pax River, MD						0.250	01/04		0.250	
Rotor Hub Quality Testing	SS CPFF	SIKORSKY, Stratford, CT	0.574								0.574	0.574
Subtotal T&E			0.574			0.330		1.759			2.663	
Remarks:												
Travel	WX	NAWCAD, Pax River, MD	0.183	0.184	11/00	0.102	11/01	0.112	11/02	Continuing	Continuing	
SBIR Assessment						0.070					0.070	
Subtotal Management			0.183	0.184		0.172		0.112		Continuing	Continuing	
Remarks:												
Total Cost			3.311	0.450		2.300		2.910		Continuing	Continuing	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development					PROJECT NUMBER AND NAME H2415 MH-60S Development					
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			30.807	41.721	23.241	20.158	13.056	11.987	6.198	Continuing	Continuing
RDT&E Articles Qty	2										2

* The FY 2001 budget reflects a \$10M Congressional add for CSTRS which has been reduced by \$0.092 million for Congressional Reductions and \$0.319 million for a SBIR assessment and will be executed under H2773.

**The FY 2002 budget reflects a \$5.1M Congressional add for CSTRS and will be executed under H2773. .

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$7.775) Continued the design, development, integration and support of the interoperability of a Common AMCM Sensor Console for the MH-60S.
- (U) (\$6.382) Continued integration analysis and nonrecurring engineering efforts supporting the development and integration of the Airborne Mine Countermeasures (AMCM) unique items into the MH-60S helicopter. Commence integration of design changes into the Common Console and Common Cockpit.
- (U) (\$7.735) Continued development of Carriage, Stream, Tow, & Recovery System (CSTRS) prototypes. Conduct engineering analysis and trade studies to define unique requirements for all five AMCM sensors. (Congressional Plus-Up).
- (U) (\$1.825) Continued Navy field activity systems engineering and test support, program management, and travel for CSTRS efforts. (Congressional Plus-Up)
- (U) (\$6.870) Continued Navy field activity systems engineering and test support, program management, and travel.
- (U) (\$0.220) Performed Live Fire Test and Evaluation for the MH-60S program.

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Exhibit R-2a, RDTEN Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H2415 MH-60S Development
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$4.400) Continue the design, development, integration and support of the AMCM unique items into the MH-60S. Design develop, integrate and support the interoperability of Automatic Flight Control System (AFCS). - (U) (\$6.100) Begin the engineering and integration effort to incorporate AMCM requirements into the aircraft and ship C4I structure. - (U) (\$4.080) Continued development of Carriage, Stream, Tow, & Recovery System (CSTRS) prototypes. Conduct engineering analysis and trade studies to define unique requirements for all five AMCM sensors. (Congressional Plus-Up). - (U) (\$1.020) Continued Navy field activity systems engineering and test support, program management, and travel for CSTRS efforts. (Congressional Plus-Up) - (U) (\$3.344) Begin T&E on AMCM Mission Kits as each weapon system is introduced to the MH-60S. - (U) (\$12.823) Continue developmental efforts on a production representative MH-60S helicopter. Supplies and services include engineering investigations, nonrecurring engineering, and design. Continue development of the consoles, as well as software modifications, to support AMCM sensors and palletized system. - (U) (\$6.868) Continue Navy field activity systems engineering and test support, program management, and travel. - (U) (\$0.735) Continue Live Fire Test and Evaluation for the MH-60S program. - (U) (\$1.243) Begin AMCM Training development. Tasks include a training situation analysis, instructional system development (ISD) documentation, and flight simulator aero model update. - (U) (\$1.108) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$2.500) Design, development, integration and support of the AMCM unique items into the MH-60S. - (U) (\$10.300) Developmental efforts for a production representative MH-60S helicopter. Supplies and services include engineering investigations, nonrecurring engineering, and design. Continue development of the prototype consoles, as well as software modifications, to support AMCM sensors and palletized system. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	February 2002
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:		
3. FY 2003 PLANS cont:		
- (U) (\$1.250) Engineering and integration effort to incorporate AMCM requirements into the aircraft and ship C4I structure.		
- (U) (\$2.148) Navy field activity systems engineering and program management support and travel.		
- (U) (\$1.350) AMCM Training Systems engineering and development.		
- (U) (\$0.900) MH-60S Live Fire Test and Evaluation (LFT&E) effort.		
- (U) (\$4.793) AMCM sensor systems test and evaluation support.		

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME						
RDT&E, N / BA-5	0604212N ASW & Other Helo Development	H2415 MH-60S Development						
(U) B. PROGRAM CHANGE SUMMARY:								
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget Submit:	22.944	36.948						
(U) Adjustments from the President's Budget:	<u>7.863</u>	<u>4.773</u>						
(U) FY 2003 President's Budget Submit:	30.807	41.721	23.241					
CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: FY 2001 net increase of \$7.863 million reflects an increase of \$8.379 million to modify two MH-60S aircraft to support AMCM test and evaluation activities and an increase of \$0.148 million for test and evaluation offset by a decrease of \$0.664 million for a Small Business Innovation Research assessment. FY 2002 net increase of \$4.773 million reflects an increase of \$5.100 million for CSTRS offset by a decrease of \$0.327 million for an undistributed congressional reduction.</p> <p>(U) Schedule: The FY 2001, FY2002, and FY2003 Program, Engineering and Contracts Milestone slips result from delays in Weapon System Integration Contracts. Weapon System Integration Contracts were awarded as Undefinitized Contract Actions. The definitization of these contracts is scheduled for 2Q FY2002. MH-60S OPEVAL schedule slip is due to delays associated with MH-60S Common Cockpit Instrument Meteorological Certification (IMC) clearance and obtaining Operational Test Readiness Review approval.</p> <p>(U) Technical: N/A</p>								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>
017900 APN-1 MH-60S AMCM (Included in numbers above)	283.821	254.031 9.504	372.155 18.000	384.157 46.264	445.996 41.779	551.736 35.260	595.468 42.949	1,607.030 98.255
060510 APN-6 MH-60S	43.993	19.280	0.000	23.604	0.549	0.533	0.561	0.000
0604216N, H3053, MH-60S AMCM	0.000	12.687	0.000	0.000	0.000	0.000	0.000	0.000

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604212N ASW & Other Helo Development	H2415 MH-60S Development		
(U) D. ACQUISITION STRATEGY:				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones		AMCM IPR 4Q		AMCM IPR 2Q/04 AMCM IOC 2Q/05
(U) Engineering Milestones		Common Console CDR 3Q Common Console Delivery 4Q AFCS Design/Integration CDR 4Q	AMCM AFCS Delivery 2Q	
(U) T&E Milestones	MH-60S OPEVAL (OT-IIB) 4Q/01 - 2Q/02			AMCM OT-III A Testing 2Q/04 AMCM DT Testing 2Q/04 Complete LFT&E 3Q/05
(U) Contract Milestones		Weapon System Integration Contracts Award 1Q		

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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & Other Helo Development			H2415 MH-60S Development						
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
AMCM Tow Demo & AFCS NRE	SS/CPFF	Sikorsky, Stratford, CT	8.056			4.000	03/02	2.000	11/02		14.056	14.056
Common Cockpit Development	845OT	Lockheed Martin, Owego, NY	7.334								7.334	7.334
MH-60S NRE & Test Article Mod	SS/CPAF	Sikorsky, Stratford, CT	16.107	5.775	11/00	0.400	11/01	0.500	11/02		22.782	22.782
AMCM System Integration & Analysis	SS/CPAF	Lockheed Martin, Owego, NY	6.348	6.382	11/00	12.823	11/01	10.300	11/02	22.336	58.189	58.189
MH-60S TC DL Development/Integration	845OT	Harris Corp, FL		2.000	03/01	6.100	03/02	1.250	01/03		9.350	9.350
CSTRS Integration	SS/CPFF	Sikorsky, Stratford, CT	2.000								2.000	2.000
CSTRS Development	SS/FFP	CTC, Johnstown, PA	8.310	7.735	10/01	4.080	07/02				20.125	20.125
Subtotal Product Development			48.155	21.892		27.403		14.050		22.336	133.836	133.836
Remarks:												
Gov't Engineering & Logistics Support	Various	NSWC Coastal Systems Station	7.207	0.858	12/00	1.141	01/02	0.613	11/02	Continuing	Continuing	
Engineering, Studies, Tech Supt	Various	NAWCAD	1.687								1.687	
AMCM Training Systems	Various	NAWCAD & NAWC-TSD				1.243	01/02	1.350	01/03	0.275	2.868	
Shipboard Integration	Various	NAWCAD Lakehurst/PMS-312		0.175	09/01	0.400	01/02			Continuing	Continuing	
Gov't Engineering & Logistics Support		NAWCAD Pax River		0.490	12/00	3.008	01/02	1.021	11/02	Continuing	Continuing	
Subtotal Support			8.894	1.523		5.792		2.984		Continuing	Continuing	

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RDT&E, N / BA-5			0604212N ASW & Other Helo Development			H2415 MH-60S Development						
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
AMCM Test & Evaluation Engineering	WX	NAWCAD Patuxent River	4.534	1.690	12/00	0.615	02/02	0.386	11/02	1.900	9.125	
AMCM T&E	WX	NRWATS				3.394	01/02	4.274	11/02	20.560	28.228	
Sentient Sensor	SS/CPFF	Management Sciences Inc	0.987								0.987	0.987
MH-60S LFT&E	WX	NAWCWD China Lake		0.220	01/01	0.685	02/02	0.900	11/01	0.900	2.705	
Subtotal T&E			5.521	1.910		4.694		5.560		23.360	41.045	
Remarks:												
Misc Management Support	Various	Various	0.516								0.516	0.516
Program Management Support	Various	NAVAIR	2.824	2.108	Various	1.604	02/02	0.532	01/03	1.509	8.577	
Engineering Support	Various	NAWCAD	0.605	1.334	12/00						1.939	
Travel	WX	NAWCAD		0.215	11/00	0.100	11/01	0.115	11/02	0.495	0.925	
CSTRS Field Activity Support	WX	Various		1.825	11/00	1.020	02/02				2.845	
SBIR Assessment	Various	TBD				1.108					1.108	
Subtotal Management			3.945	5.482		3.832		0.647		2.004	15.910	
Remarks:												
Total Cost			66.515	30.807		41.721		23.241		Continuing	Continuing	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N / ASW & OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME H2463 / LAMPS MK III DATA LINK					
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	13.225		11.597*	24.901							49.723
RDT&E Articles Qty				9							9

* FY 2001 budget reflects a \$2.000 million Congressional add for Upgrading the Ship Ground Station at NAWC Aircraft Division which has been reduced by \$.018 million for Congressional Reductions and \$.009 million for SBIR assessment and will be executed under H2774.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Light Airborne Multi-Purpose System (LAMPS) MK III helicopter is deployed on Ticonderoga Class cruisers, Arleigh Burke Class Destroyer and Spruance Class destroyers, and Oliver Hazard Perry Class frigates and provides an all-weather capability for detection, classification, and localization of ships and submarines. LAMPS is an integrated ship-to-helicopter, computer-to-computer weapon system designed to increase and extend the effectiveness of the surface combatant in the performance of its mission. Currently the LAMPS helicopter is tied to its host surface ship via a C-Band bi-directional data link. This data link transfers FLIR, radar, Electronic Support Measures (ESM), Identification Friend or Foe (IFF), voice, tactical symbology, and acoustic information between the helicopter and ship making the helicopter an extension of the ships sensors and increasing the sensor horizon of the ship. The recent introduction of Cooperative Engagement Capability (CEC) into the fleet has created an Electro Magnetic Interference (EMI) problem because it operates within the same C-Band frequency spectrum as the data link. In some CEC operating modes, it completely masks the LAMPS data link resulting in loss of information exchange between the ship and helicopter. To resolve this EMI issue, the LAMPS data link is being moved from the C-Band frequency to the KU-Band. Funding supports development and delivery of 5 air and 4 surface test articles in FY 02.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$6.686) Continued NRE, manufacturing, and development effort by both vendors.
- (U) (\$1.525) Continued integration of TCDL on LAMPS Air and Ship segments; conduct Contractor Lab Testing; and start Request for Proposal (RFP) to select vendor for production.
- (U) (\$.440) Continued technical services to review and evaluate vendor progress.
- (U) (\$.061) Continued Program Management and travel.
- (U) (\$.912) Continued Field Activity, Engineering and Technical Support and Integrated Logistics Support
- (U) (\$1.973) Completed the Ship Air Mission Systems Integration to include upgrading the Ship Ground Station.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604212N / ASW & OTHER HELO DEVELOPMENT	H2463 / LAMPS MK III DATA LINK
<p>3. FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$16.375) Continue NRE, manufacturing, and development effort by vendor.- (U) (\$3.290) Continue integration of TCDL on LAMPS Air and Ship segments; conduct Contractor Lab Testing; and start Request for Proposal (RFP) to select vendor for production.- (U) (\$.440) Continue technical services to review and evaluate vendor progress. Participate in CDR.- (U) (\$.555) Continue Program Management and travel.- (U) (\$1.713) Continue Field Activity, Engineering and Technical Support and Integrated Logistics Support.- (U) (\$1.774) Perform Flight Testing, Development/Operational Test and Evaluation (DT/OT) of airborne and surface segments, environmental, and reliability testing.- (U) (.754) Portion of extramural program reserved for Small Business Innovative Research Assessment in accordance with 15 USC 638. <p>4. FY 2003 PLAN:</p> <p>Not Applicable.</p>		

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Exhibit R-2a, RDTE Budget Item Justification
(Exhibit R-2a, page 18 of 52)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N / ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H2463 / LAMPS MK III DATA LINK

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:	12.619	25.123	
(U) Adjustments from the President's Budget:	-1.022	-0.222	
(U) FY 2003 President's Budget Submit:	11.597	24.901	

CHANGE SUMMARY EXPLANATION:

- (U) Funding: The FY 2001 decrease of \$1.022 million reflects a \$.332 million decrease for Small Business Innovative Research Assessment and a \$.690 million decrease for reprioritization of requirements within the Navy. FY2002 decrease of \$.222 million reflects an undistributed congressional reduction.
- (U) Schedule: First production system delivery has slipped to 3Q/04. CDR has slipped to 2Q/02 due to minor specification changes that delayed contractor development efforts.
- (U) Technical: NOT APPLICABLE

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>
OPN BLI 425500 / LAMPS MK III Shipboard Equipment	0	0	5.488	23.018	27.205	30.864	35.260	176.485
BLI-018200 / MH-60R APN-1	223.328	53.676	9.933	116.212	392.768	397.215	409.733	419.567
BLI-060510 / MH-60R APN-6 Initial Spares	12.263	0.000	0.000	0.000	59.814	65.018	52.580	52.924

Related RDT&E

(U) PE 0604216N Multi-Mission Helicopter Upgrade Development

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N / ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H2463 / LAMPS MK III DATA LINK																									
<p>(U) D. ACQUISITION STRATEGY: PMA-299 entered into development on a Navy Section 845 Agreement with Harris Corporation to develop a TCDL solution for LAMPS. The solution will integrate the TCDL KU-Band Data Link into the LAMPS MK III weapons system, ships and aircraft. Production deliveries will begin in FY 2004.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>(2Q/02) CDR</td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>(4Q/02) SIL DT/OT</td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>(4Q/02) Pre-Prod Delivery (4Q/02) RFP for FY03 Production Contract</td> <td></td> <td>(3Q/04) First Production Delivery</td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones					(U) Engineering Milestones		(2Q/02) CDR			(U) T&E Milestones		(4Q/02) SIL DT/OT			(U) Contract Milestones		(4Q/02) Pre-Prod Delivery (4Q/02) RFP for FY03 Production Contract		(3Q/04) First Production Delivery
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																							
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(U) T&E Milestones		(4Q/02) SIL DT/OT																									
(U) Contract Milestones		(4Q/02) Pre-Prod Delivery (4Q/02) RFP for FY03 Production Contract		(3Q/04) First Production Delivery																							

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N / ASW & OTHER HELO DEVELOPMENT			H2463 / LAMPS MK III DATA LINK						
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
Primary Hardware Development	845	Harris (Melbourne, Fl)	8.900	6.686	11/00	16.375	02/02				31.961	31.961
Systems Engineering	CPIF	LMFS (Owego, NY)	2.237	1.000	11/00	3.290	02/02				6.527	6.527
Subtotal Product Development			11.137	7.686		19.665					38.488	
Remarks:												
Software Development	SS/FFP	LMFS (Owego, NY)		0.600	11/00						0.600	0.600
Integrated Logistics Support	WX	NAWCAD, Pax River MD	0.030	0.061	11/00	0.190	01/02				0.281	
Subtotal Support			0.030	0.661		0.190					0.881	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N / ASW & OTHER HELO DEVELOPMENT			H2463 / LAMPS MK III DATA LINK						
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	NAWCAD (Pax River, MD)				1.371	05/02				1.371	
Operational Test & Evaluation	WX	NAWCAD (Pax River, MD)				0.403	05/02				0.403	
Subtotal T&E						1.774					1.774	
Remarks:												
Contractor Engineering Support	RX	CSCI/SM&A/Walcoff/Averstar	0.700	0.715	12/00	0.508	01/02				1.923	1.923
Government Engineering Support	WX	NAWCAD (Pax River, MD)	1.278	2.475	11/00	1.860	01/02				5.613	
Program Management Support	RX	NAWCAD (Pax River, MD)	0.040	0.040	11/00	0.130					0.210	
Travel	WX	NAWCAD (Pax River, MD)	0.040	0.020	11/00	0.020	02/02				0.080	
SBIR Assessment						0.754						
Subtotal Management			2.058	3.250		3.272					8.580	
Remarks:												
Total Cost			13.225	11.597		24.901					49.723	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT					
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					3.489	4.079	45.670	78.301	127.655	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) PROGRAM ACCOMPLISHMENTS AND PLANS: Research and Development funds will be utilized to standup the Integrated Product Team (IPT) and produce requisite products required to meet the White House's requirement for an Executive Transport Platform. The following areas need to be explored: Nuclear Effects, E3 /TEMPEST certification requirements, Survivability (Vulnerability/Susceptibility), Facilities upgrade/modifications- Source Selection Authority (SSA), Environmental Impact, Security, Cost Estimation, Requirements Analysis, Functional Analysis and Allocation, Risk Management, Crew System/Human Systems Integration (HSI), and Logistics Support Analysis.

1. FY 2001 ACCOMPLISHMENTS:

- (U) N/A

2. FY 2002 PLANS:

- (U) N/A

3. FY 2003 PLANS:

- (U) (\$.440) Upon completion of the Alternatives of Analysis (AOA), Requirements Analysis, and Functional Analysis and Allocation will be contracted for utilizing existing NAVAIR contractual vehicles.

- (U) (\$.350) Trade Study to develop System Requirements Analysis.

- (U) (\$1.199) In-house field activity support of Integrated Product Teams (IPT's), and logistics activities to allow for preparation of the Acquisition Strategy, examine the equipment and avionics for the VHXX platform, and develop the Acquisition Program Baseline. The Plan of Action and Milestones (POA&M) does not allow these functions to be accomplished sequentially.

- (U) (\$1.500) Research and development effort to combine the current programs to replace VHF-FM system in the VH-3D and VH-60N Presidential support aircraft to meet NTIA compliance issues with the development of the VH-XX. It will develop a road map for all Presidential Vertical lift communication requirements in the future and allow the currently planned communication capabilities of the VH-3D and VH-60N to be seamlessly integrated into the VH-XX. (DERF Funding)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT																																															
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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & OTHER HELO DEVELOPMENT			H3058 VHXX REPLACEMENT						
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
Trade Studies	SS/CPFF	Sikorsky, Stratford, CT						0.350	02/03		0.350	0.350
Trade Studies for VHF-FM System	CPFF	TBD						1.500				1.500
Subtotal Product Development								1.850			1.850	
Remarks:												
Engineering, Studies, Tech Support	WX/RX	NAWCAD, Pax River, MD						0.440	03/03	Continuing	Continuing	
Misc In-house Engineering, Logistics	WX	NAWCAD, Pax River, MD						0.900	01/03	Continuing	Continuing	
Subtotal Support								1.340		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & OTHER HELO DEVELOPMENT			H3058 VHXX REPLACEMENT						
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
Subtotal T&E												
Remarks:												
Travel	WX	NAWCAD Pax River, MD						0.089	11/03	Continuing	Continuing	
Program Management Support	RX	NAWCAD Pax River, MD						0.210	01/03	Continuing	Continuing	
Subtotal Management												
Remarks:												
Total Cost								3.489		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME H3059 CH-53E SLEP					
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					2.983	4.975	112.190	304.282	340.412	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Modernized CH-53E will be the U.S. Marine Corps' heavy lift aircraft through 2025. Current research and operational analysis indicates that the Marine Corps' need for heavy lift capability is increasing. Accordingly, the Modernized CH-53E will be capable of lifting large, mission representative external and internal loads to complement the range and speed of the MV-22 in Operational Maneuver From The Sea and the execution of our national military strategy. Research and Development funds will be used to start risk reduction measures which will include trade studies, cost modeling, the development of programmatic, engineering and logistics infrastructure; and the development of operational requirements documents and all acquisition efforts associated with an ACAT I program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) N/A

2. FY 2002 PLANS:

- (U) N/A

3. FY 2003 PLANS:

- (U) (\$.200) Field activity support for the requirements generation process.

- (U) (\$1.900) Trade Studies in the areas to develop System Requirements Analysis.

- (U) (\$.883) In-house field activity support of Integrated Product Teams (IPT's), and engineering and logistics activities to allow for preparation of the Acquisition Strategy, examine the equipment and avionics for the Modernized CH-53E.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3059 CH-53 SLEP																																															
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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N ASW & OTHER HELO DEVELOPMENT				PROJECT NUMBER AND NAME H3059 CH-53E SLEP					
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
Trade Studies	SS/CPFF	Sikorsky, Stratford, CT						1.600	01/03		1.600	1.600
Requirements Generation	RX	MCCDC Quantico, VA						0.200	11/02	Continuing	Continuing	
Subtotal Product Development								1.800		Continuing	Continuing	
Remarks:												
Engineering, Studies, Tech Support	WX/RX	NAWCAD Pax River, MD						0.750	11/02	Continuing	Continuing	
Subtotal Support								0.750		Continuing	Continuing	
Remarks:												

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Exhibit R-2a, RD TEN Budget Item Justification
(Exhibit R-2a, page 29 of 52)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & OTHER HELO DEVELOPMENT			H3059 CH-53E SLEP						
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
Subtotal T&E												
Remarks:												
Travel	WX	NAWCAD Pax River, MD						0.133	11/02	Continuing	Continuing	
Program Management Support	RX	NAWCAD Pax River, MD						0.300	11/03	Continuing	Continuing	
Subtotal Management								0.433		Continuing	Continuing	
Remarks:												
Total Cost								2.983		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development				PROJECT NUMBER AND NAME H3060 Integrated Mechanical Diagnostics System (IMDS)					
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			3.764	6.938							10.702
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Integrated Mechanical Diagnostics System (IMDS) adapts a BFGoodrich (BFG) Aerospace commercial mechanical diagnostic system for military use, and integrates and tests the system on the H-53 and H-60 helicopters. This health and usage monitoring system will reduce operational and support costs, improve operational readiness, and increase flight safety through the early identification and correction of degraded components in the engine, drive train, and rotor systems of the helicopter. IMDS provides continuous onboard monitoring and diagnostics of engine health, gearbox and drive train vibrations, oil debris, and rotor track and balance. This new development effort continues the ongoing COSSI initiative, and is required to support completion of the Navy-specific efforts associated with the IMDS program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$3.764) Continued the ongoing Commercial Operations and Support Savings Initiative (COSSI) adapting BFG's product to the military environment which has proven more complex and time consuming than planned, thus continuing IMD efforts to include source data completion, H-60 kit integration design and test, correction of software deficiencies, and continue contractor engineering support through Operational Evaluation (OPEVAL).

2. FY 2002 PLANS:

- (U) (\$6.938) Continuing of the ongoing Commercial Operations and Support Savings Initiative (COSSI) adapting BFG's product to the military environment in conjunction with H-53; which has proven more complex and time consuming than planned, thus continuing IMD efforts to include source data completion, H-60 kit integration design and test, correction of software deficiencies, and continue contractor engineering support through Operational Evaluation (OPEVAL).

3. FY 2003 PLANS: N/A

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development			PROJECT NUMBER AND NAME H3060 Integrated Mechanical Diagnostics System (IMDS)			
(U) B. PROGRAM CHANGE SUMMARY:								
		FY2001	FY2002	FY2003				
(U) FY 2002 President's Budget:		0	0					
(U) Adjustments from the President's Budget:		3.764	6.938					
(U) FY 2003 President's Submit:		3.764	6.938					
CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: The FY 2001 increase of \$3.764 million for the Integrated Mechanical Diagnostics System (IMDS) was approved as part of the FY 2001 OMNIBUS Reprogramming. The FY 2002 net increase of \$6.938 million reflects a \$7.000 million Congressional Add for the IMDS offset by a decrease of \$.062 million for an undistributed congressional reduction.</p> <p>(U) Schedule: The schedule supports the current program plan which was not reflected in the President's Budget pending approval of the FY 2001 OMNIBUS Reprogramming.</p> <p>(U) Technical: Not Applicable</p>								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
	<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Complete
APN BLI-053000	H-60 Series	23.211	9.609	15.419	28.705	5.057	5.767	5.767 66.400
APN BLI-052801	H-53 Series	24.356	18.794	22.517	34.738	30.854	39.311	39.007 132.000

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UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H3060 Integrated Mechanical Diagnostics System (IMDS)		
(U) D. ACQUISITION STRATEGY: The contract was awarded on an existing 845 Other Transaction Agreement.				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones				
(U) Engineering Milestones				
(U) T&E Milestones	DT-IIB (3Q01-4Q01)	DT-IIC (4Q01-1Q02) OTRR (2Q02) OT-11A (2Q02-4Q02)	OPEVAL (1Q03-2Q03) Milestone III (1Q03)	
(U) Contract Milestones				

R-1 SHOPPING LIST - Item No. 94

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N ASW & Other Helo Development				PROJECT NUMBER AND NAME H3060 Integrated Mechanical Diagnostics System (IMDS)					
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
Systems Engineering	845OT	BFGoodrich Aerospace		3.764	11/00	6.938	12/01				10.702	10.702
Subtotal Product Development				3.764		6.938					10.702	10.702
Remarks: Contract amount above reflects cost for Project H3060 only and does not include funding from other sources. The total 845OT value including funding from all sources will be \$19.2M												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												

R-1 SHOPPING LIST - Item No. 94

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & Other Helo Development			H3060 Integrated Mechanical Diagnostics System (IMDS)						
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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management												
Remarks:												
Total Cost				3.764		6.938					10.702	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development				PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)					
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				0.991							0.991
RDT&E Articles Qty				1							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Laser Aim Scoring System (LASS) provides real-time, quantitative feedback on critical aspects of laser guided weapon employment not currently available from existing Navy laser scoring systems. This feedback has been proven to significantly improve flight crew weapon delivery capabilities during nearly a decade of use by the U. S. Army. The system consists of three major components: A Base Station, Target Kit and aircraft Flight Data Unit. LASS will be adapted to existing Navy seaborne targets to support Navy H-60 armed helicopter raining and readiness events requiring laser scoring capability.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: N/A

2. FY 2002 PLANS:

-(U) (\$.991) Design and development efforts required for adaptation of an existing LASS base station, target and flight data unit to Navy H-60 configuration requirements.

3. FY 2003 PLANS: N/A

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development	PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)																																		
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;"></th> <th style="text-align: center; width: 10%;"><u>FY2001</u></th> <th style="text-align: center; width: 10%;"><u>FY2002</u></th> <th style="text-align: center; width: 10%;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td></td> <td style="text-align: center;">0.991</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td></td> <td style="text-align: center;">0.991</td> <td></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2002 net increase of \$0.991 million reflects a \$1.000 million congressional add for the Laser Aim Scoring System offset by a decrease of \$0.009 million for an undistributed congressional reduction.</p> <p>(U) Schedule: Not applicable (U) Technical: Not applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable</p> <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="text-align: left; width: 25%;"><u>Line Item No. & Name</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2001</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2002</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2003</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2004</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2005</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2006</u></th> <th style="text-align: center; width: 7.5%;"><u>FY 2007</u></th> <th style="text-align: center; width: 7.5%;"><u>To Complete</u></th> </tr> </thead> <tbody> <tr> <td colspan="9" style="height: 100px;"> </td> </tr> </tbody> </table> <p>(U) D. ACQUISITION STRATEGY: TBD</p> <p>(U) E. SCHEDULE PROFILE: Not Applicable</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget Submit:				(U) Adjustments from the FY2002 President's Budget:		0.991		(U) FY 2003 President's Budget Submit:		0.991		<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>									
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>																																	
(U) FY 2002 President's Budget Submit:																																				
(U) Adjustments from the FY2002 President's Budget:		0.991																																		
(U) FY 2003 President's Budget Submit:		0.991																																		
<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>																												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N ASW & Other Helo Development			PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)						
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
Hardware/Software Development	TBD	Cartwright Electronics, Fullerton, CA				0.991	04/02				0.991	0.991
Subtotal Product Development						0.991					0.991	0.991
Remarks:												
Subtotal Support												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & Other Helo Development			H9055 SH-60 Laser Aim Scoring System (LASS)						
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
Subtotal T&E												
Remarks:												
Subtotal Management												
Remarks:												
Total Cost											0.991	0.991
Remarks:												

R-1 SHOPPING LIST - Item No. 94

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Exhibit R-2a, RD TEN Budget Item Justification
(Exhibit R-2a, page 39 of 52)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development				PROJECT NUMBER AND NAME H9056 High Tech Training of DOD Legacy Parts					
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				0.991							0.991
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: High Tech Training In Support Of DOD Legacy Parts.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 PLANS: Not Applicable

2. FY 2002 PLANS:

- (U) (\$.991) Research and develop additional functionality for desktop tactical trainer. Adapt functionality to increase readiness for the fleet. Develop into 18.5 software package.

3. FY 2003 PLANS: Not Applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development			PROJECT NUMBER AND NAME H9056 High Tech Training of DOD Legacy Parts		
(U) B. PROGRAM CHANGE SUMMARY:							
	FY2001	FY2002	FY2003				
(U) FY 2002 President's Budget:							
(U) Adjustments from the President's Budget:							
		0.991					
(U) FY 2003 President's Budget Submit:							
		0.991					
CHANGE SUMMARY EXPLANATION:							
(U) Funding: The FY 2002 net increase of \$0.991 million reflects a \$1.000 million congressional add for High Tech Training of DOD Legacy Parts offset by a decrease of \$0.009 million for an undistributed congressional reduction.							
(U) Schedule: Not Applicable							
(U) Technical: Not Applicable							
(U) C. OTHER PROGRAM FUNDING SUMMARY:							
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Complete
APN BLI-053000 H-60 Series	23.211	9.609	15.419	28.705	28.248	5.057	5.767 66.400
APN BLI-052801 H-53 Series	24.356	18.794	22.517	34.738	30.854	39.311	39.007 132.000

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H9056 High Tech Training of DOD Legacy Parts																										
<p>(U) D. ACQUISITION STRATEGY: The contract was awarded on an existing 845 Other Transaction Agreement.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">(U) Program Milestones</td> <td></td> <td style="padding: 5px;">Release to fleet (4qtr02)</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">(U) Engineering Milestones</td> <td></td> <td style="padding: 5px;">Development (2qtr02 - 4qtr-02)</td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding: 5px;">(U) Contract Milestones</td> <td></td> <td style="padding: 5px;">Contract Award (2qtr 02)</td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones		Release to fleet (4qtr02)			(U) Engineering Milestones		Development (2qtr02 - 4qtr-02)			(U) T&E Milestones					(U) Contract Milestones		Contract Award (2qtr 02)		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																								
(U) Program Milestones		Release to fleet (4qtr02)																										
(U) Engineering Milestones		Development (2qtr02 - 4qtr-02)																										
(U) T&E Milestones																												
(U) Contract Milestones		Contract Award (2qtr 02)																										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N ASW & Other Helo Development			PROJECT NUMBER AND NAME H9056 High Tech Training of DOD Legacy Parts						
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
Systems Engineering	CPFF	Lockheed Manassas Manassas, VA				0.991					0.991	0.991
Subtotal Product Development						0.991					0.991	0.991
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												

R-1 SHOPPING LIST - Item No. 94

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Exhibit R-2a, RD TEN Budget Item Justification
(Exhibit R-2a, page 43 of 52)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N ASW & Other Helo Development			H9056 High Tech Training of DOD Legacy Parts						
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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management												
Remarks:												
Total Cost								0.991			0.991	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N Other Helicopter Development				PROJECT NUMBER AND NAME H-60 FLIR Mount					
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				2.532							2.532
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: H-60 FLIR Mount, Congressional Add.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: N/A

2. FY 2002 PLANS:

- (U) (\$2.532) H-60 FLIR Mount (Congressional Plus-Up).

3. FY 2003 PLANS: N/A

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N Other Helicopter Development	PROJECT NUMBER AND NAME H-60 FLIR Mount

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:		0.000	
(U) Adjustments from the FY 2002 President's Budget:		2.532	
(U) FY 2003 President's Budget:		2.532	

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 2002 reflects a Congressional plus-up of \$2.600 million for H-60 FLIR Mount decreased by \$.068 million due to an undistributed Congressional reduction..

(U) Schedule: Not applicable

(U) Technical: Not applicable

<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total</u>
APN-1 MH-60R (BLI 018200)	53.676	9.933	116.212	392.768	397.215	409.733	419.567	5,919.588	7942.02
APN-6 MH-60R Initial Spares (BLI 060510)	0.000	0.000	0.000	59.814	65.018	52.580	52.924	5.600	248.199

Related RDT&E
PE 0604216N Multi-Mission Helicopter Upgrade Development

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N Other Helicopter Development			PROJECT NUMBER AND NAME H-60 FLIR Mount						
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
H-60 FLIR Mount	RX	NSWC Crane, Indy				2.532	04/02				2.532	2.532
Subtotal Product Development						2.532					2.532	2.532
Remarks:												
Subtotal Support												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N Other Helicopter Development			H-60 FLIR Mount						
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
Subtotal T&E												
Remarks:												
Subtotal Management												
Remarks:												
Total Cost											2.532	2.532
Remarks:												

R-1 SHOPPING LIST - Item No. 94

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Exhibit R-2a, RD TEN Budget Item Justification
(Exhibit R-2a, page 48 of 52)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604212N Other Helicopter Development				PROJECT NUMBER AND NAME H9058 H-60 Helicopter Dynamic Component					
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				2.577							2.577
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: H-60 Dynamic Component Life Cycle Engineering Evaluation to assess criteria and development of component upgrades for Life Extension.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: N/A

2. FY 2002 PLANS:

- (U) (\$2.577) Dynamic Component Life Cycle Engineering Evaluation, Life Cycle criteria and development of component upgrades for Life Extension.

3. FY 2003 PLANS: N/A

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2002
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N Other Helicopter Development	PROJECT NUMBER AND NAME H9058 H-60 Helicopter Dynamic Component
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(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:		0.000	
(U) Adjustments from the FY 2002 President's Budget:		2.577	
(U) FY 2003 President's Budget:		2.577	

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 2002 reflects a Congressional plus-up of \$2.600 million for H-60 Helicopter Dynamic Component offset by a decrease of \$.023 million for undistributed congressional reduction.

(U) Schedule: Not applicable

(U) Technical: Not applicable

<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total</u>
APN-1 MH-60R (BLI 018200)	53.676	9.933	116.212	392.768	397.215	409.733	419.567	5,919.588	7942.02
APN-6 MH-60R Initial Spares (BLI 060510)	0.000	0.000	0.000	59.814	65.018	52.580	52.924	5.600	248.199

Related RDT&E
PE 0604216N Multi-Mission Helicopter Upgrade Development

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604212N Other Helicopter Development			PROJECT NUMBER AND NAME H9058 H-60 Helicopter Dynamic Component						
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
H-60 Helicopter Dynamic Component	TBD	TBD				2.577	04/02				2.577	2.577
Subtotal Product Development						2.577					2.577	2.577
Remarks:												
Subtotal Support												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N Other Helicopter Development			H9058 H-60 Helicopter Dynamic Component						
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
Subtotal T&E												
Remarks:												
Subtotal Management												
Remarks:												
Total Cost												
						2.577				2.577		
Remarks:												

R-1 SHOPPING LIST - Item No. 94

UNCLASSIFIED

Exhibit R-2a, RD TEN Budget Item Justification
(Exhibit R-2a, page 52 of 52)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604214N / AV-8B AIRCRAFT					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	1,608.707		28.134	30.723	18.565	13.253	6.997	7.108	7.229		1,720.716
H0652 AV-8B	1,499.125		6.187	24.754	16.426	13.253	6.997	7.108	7.229		1,581.079
H2634 AV-8B (OSCAR)	109.582		21.947	5.969	2.139						139.637
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. - MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) (H0652) The program provides AV-8B Design, Development, Integration and Test of the following improvements, including: The Engine Life Management Program (ELMP), Zero Retention Force (ZRF), Escape System, Joint Mission Planning System, and Tactical Aircraft Moving Map Capability. The Engine Life Management Program (ELMP) provides safety of flight and operational readiness improvements for the F402-RR-408 Engine. The Escape System will qualify an improved ejection seat to reduce the risk of injury to aircrew. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison. The Joint Mission Planning System (JMPS) is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The Self Contained Approach (SCA) will provide the capability to decelerate and hover Instrument Meteorological Conditions and will direct pilot to proper conditions vice situational guidance. The Tactical Aircraft Moving Map Capability (TAMMAC) is the avionics system that will replace the aging/obsolete AN/ASQ-196 digital map set and the AN/ASQ-194 data storage set presently installed. Advanced weapons coordination includes requirements and interface liaison with efforts such as Joint Stand-Off Weapon (JSOW), AIM-9X, Digital Multiple Carriage Bomb Rack (DMCBB), Advanced Expendables and Electronic Warfare suite upgrades.</p> <p>(U) (H2634) The program provides AV-8B Integration and Test of the following improvements, including: Open System Core Avionics Requirement (OSCAR), Joint Direct Attack Munition (JDAM), HAVEQUICK SINGGARS, and Advanced Mission Computer (AMC). The Open System Core Avionics Requirement (OSCAR) is a form-fit-function replacement of the existing AV-8B mission and stores management computers that would capitalize on commercial-off-the-shelf hardware components and modular high order software language which will provide the necessary computer memory and throughput to integrate current modifications such as JDAM and HAVEQUICK/SINGGARS. On 7 Oct 96 ASN (RD&A) directed the Program Manager to proceed immediately with the OSCAR initiative. On 4 Sep 98, Special Assistant to ASN(RDA) approved OSCAR program restructuring with capitalization on the Advanced Mission Computer (AMC). The title of the Operational Flight Program (OFF) software development effort which integrates the Joint Direct Attack Munitions (JDAM) and HAVEQUICK/SINGGARS into the AV-8B was changed from C2.0 to OC 1.2 to reflect the change of effort in accordance with the ASN (RDA) approved AV-8B Open System Core Avionics Requirements (OSCAR) initiative. OSCAR completed first flight 29 May 1998. Successfully completed Iteration 4 and 5 flight testing and commenced Iteration 6 in first quarter FY01 for OC1.1. Starting flight testing of OC1.2 in fourth quarter of FY01 to continue through to third quarter FY02.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT to encompass engineering and manufacturing development of new end items prior to the production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 13)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT				PROJECT NUMBER AND NAME H0652 / AV-8B					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	1,499.125		6.187	24.754	16.426	13.253	6.997	7.108	7.229		1,581.079
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The program provides AV-8B Integration and Test of the following improvements, including: Engine Life Management Program (ELMP), Ejection Seat, Zero Retention Force (ZRF), Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft handling performance improvements. The Engine Life Management Program (ELMP) provides safety of flight and operational readiness improvements for the F402-RR-408 Engine. The Escape System will qualify a new improved ejection seat to reduce the risk of injury to aircrew. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison. The Joint Mission Planning System (JMPS) is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The Self Contained Approach (SCA) will provide the capability to decelerate and hover Instrument Meteorological Conditions and will direct pilot to proper conditions vice situational guidance. The Tactical Aircraft Moving Map Capability (TAMMAC) is the avionics system that will replace the aging/obsolete AN/ASQ-196 digital map set and the AN/ASQ-194 data storage set presently installed. A/C Handling and performance is all engineering activities for development and design to support aircraft safety flight clearance and concept exploration to support POM objectives.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS (\$K):

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$0.250) Continued aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$2.997) Commenced design, development, and integration of the AV-8B JMPS.
- (U) (\$2.940) Continued design, development, and testing of the Escape System Performance upgrade.

2. FY 2002 PLANS:

- (U) (\$2.919) Continue aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$5.494) Commence analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine Life Management Program (ELMP).
- (U) (\$2.085) Continue design, development, and integration of the AV-8B JMPS.
- (U) (\$5.510) Commence design, development, and integration of the AV-8B Zero Retention Force (ZRF) solenoid Harrier Action Review Panel (HARP) initiative.
- (U) (\$7.940) Commence development and test of the SCA project.
- (U) (\$0.806) Portion of external program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 638

3. FY 2003 PLANS :

- (U) (\$4.172) Continue aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$8.384) Continue analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine Life Management Program (ELMP).
- (U) (\$2.590) Continue design, development, and integration of the AV-8B JMPS.
- (U) (\$1.280) Continue development and test of the SCA project.

R-1 SHOPPING LIST - Item No. 95

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H0652 / AV-8B																																		
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">FY2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2002</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2003</th> <th colspan="4"></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">6.188</td> <td style="text-align: center;">26.875</td> <td></td> <td colspan="4"></td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.001</td> <td style="text-align: center;">-2.121</td> <td></td> <td colspan="4"></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">6.187</td> <td style="text-align: center;">24.754</td> <td style="text-align: center;">16.426</td> <td colspan="4"></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2001 decrease of \$0.001M is for reprioritization of requirements within the Navy. The FY2002 decrease of \$2.121M reflects a decrease of \$1.9M for reprioritization of requirements within the Navy and decrease of \$0.221M for an undistributed Congressional reduction .</p> <p>(U) Schedule: The FY2001 AVJMPS CDR schedule change from 3Q/01 to 1Q/02 was due to PMA-233 JMPS Beta six month slip in deliverables and milestones.</p> <p>(U) Technical: N/A</p>									FY2001	FY2002	FY2003					(U) FY 2002 President's Budget:	6.188	26.875						(U) Adjustments from the President's Budget:	-0.001	-2.121						(U) FY 2003 President's Budget Submit:	6.187	24.754	16.426				
	FY2001	FY2002	FY2003																																				
(U) FY 2002 President's Budget:	6.188	26.875																																					
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(U) FY 2003 President's Budget Submit:	6.187	24.754	16.426																																				
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2002</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2003</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2004</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2005</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2006</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2007</th> <th style="text-align: center; border-bottom: 1px solid black;">To Complete</th> </tr> </thead> <tbody> <tr> <td>APN BLI 051400, AV-8B Series Modifications</td> <td style="text-align: center;">119.5</td> <td style="text-align: center;">73.6</td> <td style="text-align: center;">32.2</td> <td style="text-align: center;">23.6</td> <td style="text-align: center;">27.5</td> <td style="text-align: center;">28.0</td> <td style="text-align: center;">15.0</td> <td style="text-align: center;">40.5</td> </tr> </tbody> </table>								Line Item No. & Name	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	APN BLI 051400, AV-8B Series Modifications	119.5	73.6	32.2	23.6	27.5	28.0	15.0	40.5														
Line Item No. & Name	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete																															
APN BLI 051400, AV-8B Series Modifications	119.5	73.6	32.2	23.6	27.5	28.0	15.0	40.5																															
<p>Related RDT&E: P.E. 0604264N, Aircrew Systems (PMA202).</p>																																							

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B																											
<p>(U) D. ACQUISITION STRATEGY: All efforts under Aircraft Handling provide investigations and analysis of testing and flight clearance authorization necessary to assess overall system capability and integration of projects. Funding for the Escape System will qualify an improved ejection seat design and will be placed on a cost type fee contract awarded to UPKO and HARCO. Funding for the Engine Life Management Program (ELMP) will be placed on a cost type contract to Rolls Royce to address top readiness degraders, safety of flight issues, engine removal and mission failure drivers, assess life management program issues, and design fixes for any service revealed deficiencies. NAWCWD, China Lake began integration of the AVJMPS program and the SCA program in FY01. Funding for the ZRF solenoid will be placed on a cost type contract awarded to Raytheon to integrate the solenoid to provide safe ordnance jettison and selectable weapons.</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%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> <th style="width: 20%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>1Q/01 AVJMPS PIR/IBR/PDR</td> <td></td> <td>3Q/03 Non-Destructive Inspection Complete</td> <td>2Q/04 AVJMPS Introduction to Fleet</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>3Q/01 AVJMPS PDR</td> <td>2Q/02 Begin ZRF Integration 2Q/02 SCA S/W Development 1Q/02 AVJMPS CDR</td> <td>3Q/03 Fatigue Management System "Module 2" Comp 4Q/03 ZRF CDR 4Q/03 Material Substantiative Comp</td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td>1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V</td> <td>3Q/02 Initiate ASMET Testing</td> <td>1Q/03 ELMP Progress Reports 2Q/03 SCA DT 3Q/03 Continue ASMET Testing 4Q/03 SCA OT 4Q/03 AVJMPS OTRR</td> <td>3Q/03 Continue ASMET Testing 2Q/04 AVJMPS JC1 OT Complete</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>2Q/02 Award ELMP Contract</td> <td>1Q/03 Award ELMP Contract</td> <td>1Q/04 Award ELMP Contract 1Q/04 TAMMAC & AVJMPS Integration</td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	1Q/01 AVJMPS PIR/IBR/PDR		3Q/03 Non-Destructive Inspection Complete	2Q/04 AVJMPS Introduction to Fleet	(U) Engineering Milestones	3Q/01 AVJMPS PDR	2Q/02 Begin ZRF Integration 2Q/02 SCA S/W Development 1Q/02 AVJMPS CDR	3Q/03 Fatigue Management System "Module 2" Comp 4Q/03 ZRF CDR 4Q/03 Material Substantiative Comp		(U) T&E Milestones	1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V	3Q/02 Initiate ASMET Testing	1Q/03 ELMP Progress Reports 2Q/03 SCA DT 3Q/03 Continue ASMET Testing 4Q/03 SCA OT 4Q/03 AVJMPS OTRR	3Q/03 Continue ASMET Testing 2Q/04 AVJMPS JC1 OT Complete	(U) Contract Milestones		2Q/02 Award ELMP Contract	1Q/03 Award ELMP Contract	1Q/04 Award ELMP Contract 1Q/04 TAMMAC & AVJMPS Integration
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones	1Q/01 AVJMPS PIR/IBR/PDR		3Q/03 Non-Destructive Inspection Complete	2Q/04 AVJMPS Introduction to Fleet																									
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(U) T&E Milestones	1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V	3Q/02 Initiate ASMET Testing	1Q/03 ELMP Progress Reports 2Q/03 SCA DT 3Q/03 Continue ASMET Testing 4Q/03 SCA OT 4Q/03 AVJMPS OTRR	3Q/03 Continue ASMET Testing 2Q/04 AVJMPS JC1 OT Complete																									
(U) Contract Milestones		2Q/02 Award ELMP Contract	1Q/03 Award ELMP Contract	1Q/04 Award ELMP Contract 1Q/04 TAMMAC & AVJMPS Integration																									

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H0652 / AV-8B						
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	NAWC-WD CHINA LAKE	32.234	0.220	10/00	1.496	02/02	1.050	10/02	4.190	39.190	
Operational Test & Evaluation	WX	NAWC-WD CHINA LAKE	19.258	0.200	10/00					2.468	21.926	
Subtotal T&E			51.492	0.420		1.496		1.050		6.658	61.116	
Remarks:												
Contractor Engineering Support	RX	NAWC-AD PATUXENT RIV	46.324	0.125	10/00	0.125	02/02	0.125	10/02	0.350	47.049	
SBIR Assessment						0.806					0.806	
Subtotal Management			46.324	0.125		0.931		0.125		0.350	47.855	
Remarks:												
Total Cost			1,499.125	6.187		24.754		16.426		34.587	1,581.079	
Remarks:												

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 7 of 13)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT				PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	109.582		21.947	5.969	2.139						139.637
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Program provides AV-8B Integration and Test of the following improvements, including: Open System Core Avionics Requirement (OSCAR), Joint Direct Attack Munition (JDAM), HAVEQUICK/SINGGARS, and Advanced Mission Computer (AMC). OSCAR is a form-fit-function replacement of the existing AV-8B mission and stores management computers that would capitalize on commercial-off-the-shelf hardware components and modular high order software language which will provide the necessary computer memory and throughput to integrate current modifications such as JDAM and HAVEQUICK/SINGGARS. On 7 Oct 96 ASN (RD&A) directed the Program Manager to proceed immediately with the OSCAR initiative. On 4 Sep 98, Special Assistant to ASN(RDA) approved OSCAR program restructuring with capitalization on the Advanced Mission Computer (AMC). The title of the Operational Flight Program (OFP) software development effort which integrates the Joint Direct Attack Munitions (JDAM) and HAVEQUICK/SINGGARS into the AV-8B was changed from C2.0 to OC 1.2 to reflect the change of effort in accordance with the ASN(RDA) approved AV-8B Open System Core Avionics Requirements (OSCAR) initiative. OSCAR completed first flight 29 May 1998. Successfully completed Iteration 4 and 5 flight testing and commenced Iteration 6 in first quarter FY01 for OC1.1. Starting flight testing of OC1.2 in fourth quarter of FY01 to continue through to third quarter FY02.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$1.000) Continued integration and test software to the ARC-210 HAVEQUICK and SINGGARS waveform full functionality.
- (U) (\$20.947) Continued the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continued the development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.

2. FY 2002 PLANS:

- (U) (\$5.788) Continue the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continue development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.
- (U) (\$0.181) Portion of external program for Small Business innovation Research (SBIR) assessment in accordance with 15 USC 638

3. FY 2003 PLANS:

- (U) (\$2.139) Continue the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continued development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 8 of 13)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)																																																				
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)																									
<p>(U) D. ACQUISITION STRATEGY: PEO(A) ADM Ser DPEO(A)-ACQ2/015-97 dated 6 March 1997 approved the MSII acquisition strategy for OSCAR as an ACAT IVT program. OSCAR avionics CDR was held in January 1998 and completed first flight 29 May 1998. Using the NAWC-WD CPAF contract, funds will be used for basic design definition, drawing development, and OFP development and test. Twelve Mission System Computers and fourteen Warfare Management Computer engineering models have been procured for laboratory and flight test. The NAWC-WD/Boeing follow-on CPAF Contract was awarded on 16 December 1998. The period of performance will be for five years based on the need to complete Open System Core Avionics Requirement (OSCAR) and begin follow-on software block upgrade H2.0. As directed during 4 September 1998 program restructuring, an ACAT redesignation letter was approved changing the OSCAR program from an ACAT IVT program to an ACAT II program. The schedule was revised due to impact of AV-8B F402-RR-408 engine red stripe which resulted in a 5-month developmental test impact delay. Revised schedule has been approved and is currently being executed.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 25%; text-align: center;"><u>FY 2001</u></th> <th style="width: 25%; text-align: center;"><u>FY 2002</u></th> <th style="width: 25%; text-align: center;"><u>FY 2003</u></th> <th style="width: 25%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td style="text-align: center;">2Q/02 HW LRIP Decision</td> <td style="text-align: center;">2Q/03 OC1.2 - MSIII</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td style="text-align: center;">3Q/01 Begin OC1.2 Integration</td> <td colspan="3" style="text-align: center;">3Q/02 OC1.2 Integration Complete</td> </tr> <tr> <td>(U) T&E Milestones</td> <td style="text-align: center;">4Q/01 Begin DT OC1.2</td> <td style="text-align: center;">3Q/02 OC1.2 DT Complete 3Q/02 OC1.2 OTRR 4Q/02 Begin OT OC1.2</td> <td colspan="2" style="text-align: center;">2Q/03 OC1.2 OT Complete</td> </tr> <tr> <td>(U) Contract Milestones</td> <td colspan="4"></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones		2Q/02 HW LRIP Decision	2Q/03 OC1.2 - MSIII		(U) Engineering Milestones	3Q/01 Begin OC1.2 Integration	3Q/02 OC1.2 Integration Complete			(U) T&E Milestones	4Q/01 Begin DT OC1.2	3Q/02 OC1.2 DT Complete 3Q/02 OC1.2 OTRR 4Q/02 Begin OT OC1.2	2Q/03 OC1.2 OT Complete		(U) Contract Milestones				
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT				PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)					
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	NAWC-WD CHINA LAKE	13.472	0.228	10/00	1.089	03/02	0.941	10/02		15.730	
Operational Test & Evaluation	WX	NAWC-WD CHINA LAKE	2.503	0.188	10/00	1.310	03/02				4.001	
Subtotal T&E			15.975	0.416		2.399		0.941			19.731	
Remarks:												
SBIR Assessment						0.181					0.181	
Subtotal Management						0.181					0.181	
Remarks:												
Total Cost			109.582	21.947		5.969		2.139			139.637	
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604215N, Standards Development					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost			99.515	69.016	37.757	23.610	13.025	13.504	13.767	Continuing	Continuing
E2310/Flight Polynomials	0.278		0.323								0.601
E2311/Stores Planning and Weaponing Module			8.156	7.498	1.781	1.680	0.572	0.818	0.820	Continuing	Continuing
E2312/Common Helicopters			1.874	2.715	1.202	1.249	1.086	1.108	1.129	Continuing	Continuing
S1857/Calibration Standards			7.499	4.860	1.698	1.720	1.765	1.775	1.803	Continuing	Continuing
W0572/Joint Services/Navy Standard Avionics Components and Subsystems			81.663	53.943	33.076	18.961	9.602	9.803	10.015	Continuing	Continuing
Quantity of RDT&E Articles	140		43	44	34						261
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Project E2310, Flight Polynomials: The Navy - Portable Flight Planning Software (N-PFPS) is the basic flight planning system for the Navy and Marine Corps. One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, performance polynomials (drop-in polynomials) reflecting the performance delineated in the approved Naval Air Training & Operations Procedure & Standard (NATOPS) manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The following type/model/series aircraft are supported by this PE: F/A-18 (400), F/A-18 (402), C-2R, E-2C (Block II), F-14 B/D, AH-1W, UH-1N, CH-46E, H-60F/H, S-3B, EA-6B, AV-8B (406), AV-8 (408), T-45, and KC-130 F/R/T. The developed drop-in performance polynomials will initially be implemented in Naval Portable Flight Planning Software (N-PFPS).</p> <p>Project E2311, Stores Planning and Weaponing Module: The Naval Stores Planning and Weaponing (NSPW), now referred to as the Naval Aviation Weaponing Component (NAWC) project is an incrementally developed software product that will provide a certified unit level weaponing capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NAWC will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile); and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NAWC as a stand alone product, prior to migration to JMPS.</p>											

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 23)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5	R-1 ITEM NOMENCLATURE 0604215N, Standards Development	
<p>Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) then migrated to JMPS. Subsequent common helicopter functionality will be developed for implementation in the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.</p> <p>Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware in all major measurement technology areas). It funds Navy lead-service responsibilities in the DOD and Joint Services Metrology RDT&E program.</p> <p>Project W0572, Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, design, development, test, evaluation and qualification of standard avionics for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications, navigation, flight avionics, safety systems, and flight mission information systems for both forward fit and retrofit aircraft. These efforts continue to maintain federated systems while encouraging transition of procurements to support a modular system for enhanced performance and affordability. Consideration is given up front to reduce acquisition costs through larger procurement quantities that satisfy multi-aircraft customer requirements and that reduce life cycle costs in the areas of reliability, maintainability, and training. Several examples of past successful tasks under this project include the Standard Central Air Data Computer, Solid State Barometric Altimeter, and Downed Aircraft Location System, jointly developed with the Air Force and Army and currently installed on numerous Navy, Air Force and Army aircraft. This project also funds Navy chairmanship and participation in the Joint Services Review Committee (JSRC) for Avionics Standardization. The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, Advanced Mission Computer & Displays (AMC&D) EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Network Switches.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING & MANUFACTURING DEVELOPMENT because they encompass 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
(Exhibit R-2, page 2 of 23)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development				PROJECT NUMBER AND NAME E2311 Naval Stores Planning and Weaponeering					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			8.156	7.498	1.781	1.680	0.572	0.818	0.820	Continuing	Continuing
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Stores Planning and Weaponeering (NSPW) project, now referred to as the Naval Aviation Weaponeering Component (NAWC) project is an incrementally developed software product that will provide a certified unit level weaponeering capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NAWC will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile); and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NAWC as a stand alone product, prior to migration to JMPS.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> -(U) (\$6.663) Continued NAWC Construction Phase. Completed NAWC Iterations 5 and 75% of iteration 6. -(U) (\$1.493) Developed and released ATACS version 2.2. Began development of ATACS Version 2.3. <p>2. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> -(U) (\$2.583) Continue NAWC Construction Phase. Begin FQT and certification testing on F/A-18A/B/C/D stand alone product. Plan for NAWC transition to Fleet Users. -(U) (\$3.321) Initiate development of the JMPS integrated version of NAWCand F/A-18E/F functionality. -(U) (\$.917) Provide essential updates to ATACS until NAWC is released. -(U) (\$.450) Initiate analysis and design of loading capability for JMPS Version 1 aircraft (CH-46, CH53D, CH-53E, HH-60H, KC-130, T-45, UH-1, SH-60R, and AH-1). -(U) (\$.227) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638. <p>3. (U) FY 2003 PLAN:</p> <ul style="list-style-type: none"> -(U) (\$.311) Continue development of the F/A-18E/F NAWC applicaion. -(U) (\$.588) Continue JMPS/NAWC integration. -(U) (\$.882) Provide essential updates to NAWC. 											

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																																																	
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<p>(Related RDT&E (U) P.E. 0604231N Mission Planning</p> <p>(U) D. ACQUISITION STRATEGY: Naval Aviation Weaponing Component (NAWC) software applications are being built by a software development team composed of government and contractor entities. Engineers provide domain expertise in the areas of platform specific stores compatibility and weapons separation, load validation, drag counts, fusing, delivery and safe escape, unguided trajectory modeling, guided weapons models, weapon effects, and aerodynamic flutter to the software development team. NAWC management and the test team for IV&V and Certification Testing are also combined teams of United State Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.</p> <p>(U) E. SCHEDULE PROFILE</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td colspan="5">(U) Program Milestones</td> </tr> <tr> <td>ATACS Version 2.2</td> <td></td> <td>1Q/02 Release</td> <td></td> <td></td> </tr> <tr> <td>ATACS Version 2.3</td> <td></td> <td>3Q/02 Release</td> <td></td> <td></td> </tr> <tr> <td>NAWC Version 1.0</td> <td></td> <td>4Q/02 Release</td> <td></td> <td></td> </tr> <tr> <td>NAWC Version 2.0</td> <td></td> <td></td> <td></td> <td>4Q/04 Release</td> </tr> <tr> <td colspan="5">(U) Engineering Milestones</td> </tr> <tr> <td colspan="5">(U) T&E Milestones</td> </tr> <tr> <td>NAWC Fleet Qualification Testing</td> <td></td> <td>3Q/02</td> <td></td> <td></td> </tr> <tr> <td>NAWC Fleet Certification Testing</td> <td></td> <td>4Q/02</td> <td></td> <td></td> </tr> <tr> <td colspan="5">(U) Contract Milestones</td> </tr> <tr> <td>NAWC</td> <td>2Q/01 DCS GSA Contract Award</td> <td>2Q/02 DCS GSA Contract Award</td> <td>2Q/03 DCS GSA Contract Award</td> <td></td> </tr> <tr> <td>NAWC</td> <td></td> <td>2Q/02 PRB GSA Contract Award</td> <td>2Q/03 PRB GSA Contract Award</td> <td></td> </tr> </tbody> </table>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones					ATACS Version 2.2		1Q/02 Release			ATACS Version 2.3		3Q/02 Release			NAWC Version 1.0		4Q/02 Release			NAWC Version 2.0				4Q/04 Release	(U) Engineering Milestones					(U) T&E Milestones					NAWC Fleet Qualification Testing		3Q/02			NAWC Fleet Certification Testing		4Q/02			(U) Contract Milestones					NAWC	2Q/01 DCS GSA Contract Award	2Q/02 DCS GSA Contract Award	2Q/03 DCS GSA Contract Award		NAWC		2Q/02 PRB GSA Contract Award	2Q/03 PRB GSA Contract Award	
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R-1 SHOPPING LIST - Item Nc96

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N STANDARD DEVELOPMENT				PROJECT NUMBER AND NAME E2311 NAVY STORES PLANNING AND WEAPONERING					
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
Primary Development	WX	NAWCAD, Pax River MD	7.489	2.384	11/00	2.514	11/01	0.746	11/02	Continuing	Continuing	
Primary Development	GSA/FP	DCS Inc., PRB, Pax River MD	5.955	2.602	01/01	2.818	01/02	0.355	11/02	Continuing	Continuing	
Systems Engineering	Various	Various	3.231	1.274	11/00	0.280	11/01	0.075	11/02	Continuing	Continuing	
Subtotal Product Development			16.675	6.260		5.612		1.176		Continuing	Continuing	
Remarks:												
Subtotal Support												
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N STANDARD DEVELOPMENT				PROJECT NUMBER AND NAME E2311 NAVY STORES PLANNING AND WEAPONERING					
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	Various	Various	2.114	1.264	11/00	1.298	11/01	0.475	11/02	Continuing	Continuing	
Subtotal T&E			2.114	1.264		1.298		0.475		Continuing	Continuing	
Remarks:												
Program Management Support	RX	Various	1.275	0.485	11/00	0.215	11/01	0.075	11/02	Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD	0.466	0.147	11/00	0.146	11/01	0.055	11/02	Continuing	Continuing	
SBIR Assessment						0.227					0.227	
Subtotal Management			1.741	0.632		0.588		0.130		Continuing	Continuing	
Remarks:												
Total Cost			20.530	8.156		7.498		1.781		Continuing	Continuing	
Remarks:												

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 7 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604215N Standards Development					E2312 Common Helicopters					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.874	2.633	1.202	1.249	1.086	1.108	1.290	Continuing	Continuing
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Automated mission planning systems to date have been developing targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) then migrated to JMPS. Subsequent common helicopter functionality will be developed for implementation in the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. (U) FY 2001 ACCOMPLISHMENTS: <ul style="list-style-type: none"> - (U) (\$1.874) Continued development of Common Helicopter functionality and implementation into N-PFPS. Navy and Air Force personnel worked collaboratively to continue to develop common helicopter functionality for mission planning. Continued N-PFPS Version 3.2 development for release in FY02. 2. (U) FY 2002 PLAN: <ul style="list-style-type: none"> - (U) (\$2.551) Continue development of Common Helicopter functionality and implementation into N-PFPS. N-PFPS Version 3.2, 3.3, and 3.4 are to be released. - (U) (\$.082) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 3. (U) FY 2003 PLAN: <ul style="list-style-type: none"> - (U) (\$1.202) Continue development of Common Helicopter functionality and implementation into N-PFPS. 											

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development	PROJECT NUMBER AND NAME E2312 Common Helicopters																																				
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">1.952</td> <td style="text-align: center;">2.738</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY02 President's Budget:</td> <td style="text-align: center;">-0.078</td> <td style="text-align: center;">-0.023</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">1.874</td> <td style="text-align: center;">2.715</td> <td style="text-align: center;">1.202</td> </tr> </tbody> </table> <p style="margin-left: 40px;">CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2001 decrease of \$.078 million is due to a reprioritization of requirements within the Navy. The FY2002 decrease of \$.023 million is for an undistributed congressional reduction.</p> <p>(U) Schedule: N-PFPS Version 3.2 was delayed from 3Q/01 to 1Q/02. N-PFPS Version 3.3 was added and will be released in 2Q/02. N-PFPS Version 3.4 was added and will be released in 4Q/02. All JMPS versions and contract data were removed as they are not necessary because they are funded through E2213.</p> <p>(U) Technical: Not Applicable</p> <p style="margin-left: 40px;">(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> </tr> </thead> <tbody> <tr> <td>BLI 287600 TAC A/C Mission Planning System (OPN)</td> <td style="text-align: center;">11.83</td> <td style="text-align: center;">13.223</td> <td style="text-align: center;">6.597</td> <td style="text-align: center;">8.899</td> <td style="text-align: center;">10.317</td> <td style="text-align: center;">6.705</td> <td style="text-align: center;">12.321</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p style="margin-left: 40px;">Related RDT&E: (U) P.E. 0604231N (Mission Planning)</p>						<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	1.952	2.738		(U) Adjustments from the FY02 President's Budget:	-0.078	-0.023		(U) FY 2003 President's Budget Submit:	1.874	2.715	1.202	<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	BLI 287600 TAC A/C Mission Planning System (OPN)	11.83	13.223	6.597	8.899	10.317	6.705	12.321	Continuing
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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development	PROJECT NUMBER AND NAME E2312 Common Helicopters		
(Related RDT&E (U) P.E. 0604231N Mission Planning (E2213) (U) D. ACQUISITION STRATEGY: NOT APPLICABLE (U) E. SCHEDULE PROFILE				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones N-PFPS Version 3.2 N-PFPS Version 3.3 N-PFPS Version 3.4		1Q/02 Release 2Q/02 Release 4Q/02 Release		
(U) Engineering Milestones				
(U) T&E Milestones				
(U) Contract Milestones				

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N STANDARD DEVELOPMENT			E2312 Common Helicopters						
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
Primary Development	MP	Eglin AFB, Florida	1.677	0.474	11/00	0.939	11/01				3.090	
Subtotal Product Development			1.677	0.474		0.939				Continuing	Continuing	
Remarks: Funds initially allotted for a CPAF contract with Logicon, Inc. for primary development was redirected to NAWCAD, Eglin AFB and SPAWAR for Common Helo mission planning support.												
Subtotal Support												
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME E2312 Common Helicopters						
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
Subtotal T&E												
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River MD	0.095	0.665	11/00	0.760	11/01	0.485	11/02	Continuing	Continuing	
Program Management Support	RX	Various		0.335	11/00	0.501	11/01	0.247	11/02	Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD		0.100	11/00	0.115	11/01	0.050	11/02	Continuing	Continuing	
Government Engineering Support	WX	SPAWAR, Philly PA		0.300	11/00	0.318	11/01	0.420	11/02	Continuing		
SBIR Assessment						0.082					0.082	
Subtotal Management			0.095	1.400		1.776		1.202		Continuing	Continuing	
Remarks:												
Total Cost			1.772	1.874		2.715		1.202		Continuing	Continuing	
Remarks: Total Cost on FY 02 should read 2715 vice 2797												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			7.499	4.860	1.698	1.720	1.765	1.775	1.803	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project provides the engineering development of measurement reference/calibration standards (hardware) required to ensure measurement accuracy in support/maintenance of new advance technology weapon systems and associated support equipment. There individual tasks have been assigned to the Navy as lead-service responsibilities as part of a Joint Service/DOD program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$4.295) 13 New Projects: Begin development of 13 calibration standards (hardware) in support of microwave power measurements, broadband communications, fuel measurements systems, FLIR systems, electronic test systems, chemical/biological sensors, laser power measurements, optical systems, Watt Meter calibrators, missile guidance systems, capacitance measurement systems, fiber optic hydropones and new technology for reduced crew size.

Continued work on 17 projects begun in previous years as follows:

- (U) (\$1.073) Completed 5 Projects : 5 calibration standards (hardware) in support of electromagnetic vulnerability measurements, underwater acoustic systems, Infrared (1.52u) systems, electronic maintenance, and AN/UPM-155 pulse characterization.

- (U) (\$2.131) Continued development of 12 calibration standards (hardware) in support of fiber optic systems, shipboard gage calibration, composite material testing, laser power measurements, multifunction electrical test equipment, infrared imaging systems (8 - 12 um), infrared target designators (3 - 5 m) and Radar Cross Section measurements; 4 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions.

2. FY 2002 PLAN:

- (U) (\$1.963) Complete 19 calibration standards (hardware) in support of fiber optic systems, Watt Meter calibrators, shipboard gage calibration, composite material testing, microwave power measurements, laser power measurements, fiber optic hydrophones, infrared imaging systems (8 – 12 um), and infrared target designators (3 – 5 um) 3 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions, radar cross section measurements, optical systems, fuel measurements systems, multifunction electrical test equipment, electronic internet systems, new technology for reduced crew size, and capacitance measurement systems.

- (U) (\$1.685) Continue development of 6 calibration standard (hardware) in support of laser power measurements, broadband communication systems, FLIR systems, chemical/biological sensors, missile guidance systems, and a modeling and simulation project.

- (U) (\$1.212) Begin development of a suite of standards to reduce cumbersome work practices on board ships.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME S1857, Calibration Standards																				
<p>3. FY 2003 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$1.147) Complete 6 calibration standards (hardware) in support of biological warfare systems, broadband communication systems, laser power measurements, missile guidance systems, FLIR systems, and modeling and simulation project. - (U) (\$.551) Continue development of a suite of standards to reduce cumbersome work practices on board ships. <p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">7.503</td> <td style="text-align: center;">1.653</td> <td></td> </tr> <tr> <td>(U) Appropriated VALUE:</td> <td style="text-align: center;">1.572</td> <td style="text-align: center;">4.903</td> <td></td> </tr> <tr> <td>(U) Adjustments To: FY 2001/2002 Appropriated Value/FY2002 President's Budget Submit:</td> <td style="text-align: center;">5.927</td> <td style="text-align: center;">-0.043</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">7.499</td> <td style="text-align: center;">4.860</td> <td style="text-align: center;">1.698</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <ul style="list-style-type: none"> (U) Funding: FY 2001 change due to (-0.053) 7% Pro Rata, (+2,000) Calib & Measurement Tech, (+4,000) Joint Services Metrology, (-0.016) Gov't Wide Recission, (-0.004) 01 Actuals (30 Sept 01); FY 02 change due to (-0.043) Section 8123: Management Reform. (U) Schedule: Not applicable. (U) Technical: Not applicable. <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.</p> <p>(U) D. ACQUISITION STRATEGY: Not applicable.</p> <p>(U) E. SCHEDULE PROFILE: Not applicable.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	7.503	1.653		(U) Appropriated VALUE:	1.572	4.903		(U) Adjustments To: FY 2001/2002 Appropriated Value/FY2002 President's Budget Submit:	5.927	-0.043		(U) FY 2003 President's Budget Submit:	7.499	4.860	1.698
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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604215N, Standards Development				S1857, Calibration Standards					
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
Primary Hardware Development	WR	NSWC NWAS	6.198	6.454	10/00	3.644	10/01	1.172	10/02	Continuing	Continuing	
Systems Engineering	WR	NSWC NWAS	1.983	1.023	10/00	1.196	10/01	0.506	10/02	Continuing	Continuing	
Award Fees												
Subtotal Product Development			8.181	7.477		4.840		1.678		Continuing	Continuing	
Remarks:												
Subtotal Support												
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
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
Subtotal T&E												
Remarks:												
Travel		NSWC NWS	0.050	0.022	10/00	0.020	10/01	0.020	10/02	Continuing	Continuing	
Subtotal Management			0.050	0.022		0.020		0.020		Continuing	Continuing	
Remarks:												
Total Cost			8.231	7.499		4.860		1.698		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604215N, Standards Development					W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			81.663	53.943	33.076	18.961	9.602	9.803	10.015	Continuing	Continuing
RDT&E Articles Qty	140		43	44	34						261

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Services/Navy Standard Avionics Components and Subsystems project provides for the identification, design, development, test, evaluation and qualification of standard avionics and mandatory safety improvements for Navy use, and wherever practicable, use across all services. Standard avionics systems under development include the Terrain Awareness Warning System (TAWS), Low Probability of Intercept Altimeter (LPIA), Tactical Aircraft Moving Map Capability (TAMMAC), Midair Collision Avoidance System (MCAS), Communication Navigation Surveillance Air Traffic Management (CNS/ATM), Advanced Mission Computer & Displays (AMC&D), and the Aircraft Wireless Intercommunication Systems (AWIS). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Switches.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$67.862) Completed DT-IIA-1 for baseline AMC&D on F/A-18 E/F system. Began DT-IIA-2 for baseline system on F/A-18 E/F. Conducted PDR and CDR for Advanced Mission Computer (AMC) and Fibre Channel Network Switch and procured EMD assets for phased program (AMC&D, 8 x 10 display and Fibre Channel Network Switch). Conducted DT-IIB-1 and began DT-IIB-2 on AV-8B. Began development of Advanced Multi-Purpose Color Display (AMPDCD) assets for F/A-18 C/D and AV-8B. Continued development of AMC&D for F/A-18E/F and AV-8B, and continued 8 x 10 and Fibre Channel Network Switch development for F/A-18E/F.

- (U) (\$ 1.732) Continued to support the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Supported and participated in Avionics Operational Assessment Group (OAG) panels and Human Factors Quality Management Board (HFQMB).

- (U) (\$.250) Completed OPEVAL and performed verification of corrections for deficiencies on C-2 aircraft for LPIA.

- (U) (\$ 2.253) Safety: Integrated Phase I MCAS functionality into a host unit. Began and completed MCAS PDR/CDR. Developed a flight testable unit.

- (U) (\$ 3.069) Safety: Commenced DT of the TAWS for F/A-18 Operational Flight Plan (OFF) 17C/18E. Investigated and conducted simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance, as applied to other Naval platforms.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDTE, N / BA-5	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems	
<p>1. FY 2001 ACCOMPLISHMENTS (CON'T):</p> <ul style="list-style-type: none"> - (U) (\$.770) Completed software coding and continue functional testing efforts for TAMMAC/N-PFPS map planning capability. Awarded TAMMAC/JMPS/Unique Planning Components (UPC) development contract. - (U) (\$.425) Continued requirements identification and conducted design reviews for integration of Mission Planning System Module Integration for Common Avionics Systems, to include ARC-210 radio. First software release for ARC-210 Fill Program (AFP) as stand-alone system modified to operate in Defense Information Infrastructure Common Operating Environment (JMPS operating environment). - (U) (\$ 5.302) Completed DT for CNS/ATM civil data links and commenced TECHEVAL for RNP-4 and Mode S for CNS/ATM in VH and completed hardware development for data link. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$39.440) Complete DT-IIA-2, conduct OT-IIA (OA) and begin DT-IIA-3 for AMC&D on F/A-18E/F system. Complete DT-IIB-1 and DT-IIB-2 (TECHEVAL) and begin OT-IIB (OPEVAL) on AV-8B. Conduct PDR and CDR for 8 X10 display. Continue development and obtain production approval for Advanced Multi-Purpose Color Display (AMPCD) for AV-8B and F/A-18C/D. Continue development of 8X10 display, Fibre Channel Network Switch and AMC for F/A-18E/F. Continue development of AMC for AV-8B. - (U) (\$ 1.202) Continue to support and chair the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB. - (U) (\$ 1.663) Safety: Integrate unit on MCAS lead test platform and conduct MCAS developmental testing. Perform platform studies to determine integration impacts on other platforms. - (U) (\$ 3.105) Safety: Complete DT and commence OT of the TAWS for F/A-18 OFP 17C/18E. Evaluate data and test results from simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance. - (U) (\$.242) Complete functional testing efforts for TAMMAC/N-PFPS map planning capabilities. Conduct CDR, software coding and unit testing efforts for TAMMAC/JMPS (UPC). - (U) (\$.594) Second software release of ARC-210 AFP as partially JMPS-integrated package utilizing JMPS common database input (and correcting Software Trouble Reports (STRs) from first release). - (U) (\$ 6.064) Continue CNS/ATM integration of Mode S and Required Navigation Performance (RNP)-4 functional integration efforts into naval aircraft. Achieve MS III decision for Mode S. - (U) (\$1.633) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 			

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		February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE, N / BA-5	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems
<p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$28.164) Complete AMC&D DT-IIA-3, conduct TECHEVAL, and begin DT-IIA-4 for F/A-18E/F. Begin OPEVAL for F/A-18E/F. Complete OPEVAL for AV-8B. Continue development of 8x10 display, Fibre Channel Network Switch (FCNS) and Advance Mission Computer and Displays (AMC&D). Achieve MS III for AV-8B. - (U) (\$.962) Continue to support and chair the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB. - (U) (\$.483) Safety: Support fleet release of the TAWS for F/A-18 OFP 18E with fleet briefs and training. Monitor initial fleet acceptance of the TAWS for F/A-18 OFP 18E. Begin development of program plans based on research of commercial based TAWS and sensors and applicability to other Navy platforms. - (U) (\$.917) Third software release for ARC-210 AFP as fully integrated JMPS software segment (with corrected STRs from previous release). Complete software coding and unit testing. Begin Functional/developmental testing efforts for TAMMAC/JMPS Map planning capability. - (U) (\$ 1.253) Continue CNS/ATM functional integration and certification efforts for naval aircraft. - (U) (\$.814) Conduct Vector Product Format (VPF) integration study for TAMMAC. Begin VPF software and hardware integration into TAMMAC. Complete VPF Integration Systems Design Review (SDR). Award EMD contract. - (U) (\$.483) Conduct analysis and testing to verify AWIS performance and compatibility in multiple platforms. 		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY2001</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">82.444</td> <td style="text-align: center;">54.436</td> <td></td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.781</td> <td style="text-align: center;">-0.493</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">81.663</td> <td style="text-align: center;">53.943</td> <td style="text-align: center;">33.076</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 net decrease of \$.781 million results from a decrease of \$2.238 million for Small Business Innovative Research (SBIR) assessment and a decrease of \$.018 million for a Federal Technology Transfer offset by an increase of \$1.475 million for reprioritization of requirements within the Navy, a</p> <p style="padding-left: 40px;">The FY 2002 decrease of \$.0493 million results from a \$.481 million undistributed congressional reductions and a \$.012 million decrease for a congressional reduction to Federally Funded Research and Development Centers.</p> <p>(U) Schedule: FY 2001 reflects a change in AMC&D OT-IIA-1 from 4Q/01 to 2Q/02 to incorporate fixes from DT-IIA-1. TAMMAC /JMPS UPC Development Contract Award changed from 2Q/01 to 4Q/01 due to delays in JMPS schedule reprogramming. TAMMAC/JMPS UPC SDR changed from 3Q/01 to 2Q/02 due to delays in JMPS schedule reprogramming.</p> <p style="padding-left: 40px;">FY 2002 reflects a change in TAMMAC/JMPS UPC CDR from 1Q/02 to 3Q/02 due to delays in JMPS schedule reprogramming. TAMMAC/JMPS UPC PDR and CDR have been combined into a single review and will occur in 3Q/02 instead of 2Q/02 and 3Q/02 respectively. LPIA Milestone III decision changed from 1Q/02 to 2Q/02 due to delays in flight testing. CNS/ATM Mode S Milestone III decision changed from 2Q/02 to 4Q/02 due to delayed production representative hardware to finalize DT. TAWS OT changed from 3Q/02 to 4Q/02 due to F/A-18 aircraft schedule delays.</p> <p>(U) Technical: Not Applicable.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	82.444	54.436		(U) Adjustments from the President's Budget:	-0.781	-0.493		(U) FY 2003 President's Budget Submit:	81.663	53.943	33.076
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:	82.444	54.436																
(U) Adjustments from the President's Budget:	-0.781	-0.493																
(U) FY 2003 President's Budget Submit:	81.663	53.943	33.076															

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604215N, Standards Development			W0572, Joint Services/Navy Standard Avionics Components and Subsystems				
(U) C. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	
Common Avionics, APN	68.405	68.25	63.228	167.464	145.932	147.815	126.692	Continuing	
0702207N, Depot Maintenance, RDT&E	0.527	0.735	0	0	0	0	0	8.503	
AN/ARC-210 RT-1794(C)									
(U) D. ACQUISITION STRATEGY: AMC&D is utilizing a Sole source to McDonnell Douglas Corp. (MDC), a wholly owned subsidiary of the Boeing Company, for prototype design using an 845 Other Transaction Agreement (OTA) and Cost Plus Contract for EMD and LRIP. MDC conducted a competition to potential suppliers and selected General Dynamics Information Systems for the AMC, Honeywell for Displays, and Harris for Fibre Channel Network Switch.									
	<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>TO COMPLETE</u>		
(U) Program Milestones	3Q/01 TAMMAC MSIII		2Q/02 LPIA MSIII 4Q/02 CNS/ATM Mode S MSIII		2Q/03 AMC&D MSIII (AV-8B)		3Q/04 AMC&D MSIII (F/A-18) 4Q/05 VPF Fleet Introduction		
(U) Engineering Milestones	3Q/01-3Q/01 MCAS PDR 4Q/01-4Q/01 MCAS CDR 1Q/01-1Q/01 AMC&D PDR (F/A-18E/F) 4Q/01-4Q/01 AMC&D CDR (F/A-18E/F)		2Q/02-2Q/02 TAMMAC/JMPS UPC SDR 3Q/02-3Q/02 TAMMAC/JMPS UPC PDR/CDR		4Q/03 VPF SDR		1Q/04 VPF PDR 2Q/04 VPF CDR		
(U) T&E Milestones	4Q/01-3Q/02 TAWS DT (17C/18E OFF) 3Q/01-4Q/01 CNS/ATM DT 4Q/01-2Q/02 CNS/ATM TECHEVAL 3Q/01-3Q/02 AMC&D DT-IIA-2 (F/A-18E/F) 4Q/01-4Q/02 AMC&D DT-IIB-2 (AV-8B) 2Q/01-2Q/02 TAMMAC/N-PFPS DT		3Q/02-4Q/02 MCAS DT 4Q/02-1Q/03 TAWS OT (17C/18E OFF) 2Q/02-3Q/02 AMC&D OT-IIA-1 (F/A-18E/F) 3Q/02-2Q/03 AMC&D DT-IIA-3 (F/A-18E/F) 4Q/02-2Q/03 AMC&D OPEVAL (AV-8B)		3Q/03-4Q/03 AMC&D TECHEVAL (F/A-18E/F) 4Q/03-2Q/04 AMC&D OPEVAL (F/A-18E/F) 2Q/03-4Q/03 TAMMAC/JMPS UPC DT 4Q/03-3Q/04 AMC&D DT-IIA-4 (F/A-18E/F)		1Q/04-2Q/04 TAMMAC/JMPS UPC OPEVAL 4Q/04 VPF DT 2Q/05 VPF SQT		
(U) Contract Milestones	4Q/01 TAMMAC/JMPS UPC DEVELOPMENT AWARD				2Q/03 VPF ECP Contract Award				

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N STANDARD DEVELOPMENT			W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
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
AMC&D/ OTA845 Prime Contract	SS/845	Boeing, St. Louis, MO	49.367	5.149	11/00						54.516	54.516
AMC&D/ EMD Prime Contract	SS/CP	Boeing, St. Louis, MO	15.658	56.789	11/00	36.773	11/01	25.381	11/02	Continuing	Continuing	
LPIA/EMD Prime Contract	C/CS	BAE Systems, Wayne, NJ	7.264								7.264	
TAMMAC/EMD Prime Contract	SS/CPIF	Boeing, St. Louis, MO	26.332								26.332	26.332
CNS/ATM/EMD Prime Contract	SS/BOA	Litton, Woodland Hills, CA	1.032			1.000	01/02				2.032	2.032
CNS/ATM/EMD Prime Contract	SS/CPIF	Rockwell, Cedar Rapids, IA	2.214	0.850	03/01						3.064	3.064
CNS/ATM/EMD Prime Contract	C/FPIF	BAE Systems, Greenlawn, NY	1.538	0.288	12/00	0.331	12/01				2.157	2.157
MCAS/EMD Prime Contract	SS/CPFF	BAE Systems, Greenlawn, NY		1.535	05/01	0.434	01/02				1.969	1.969
Miscellaneous	Misc	Misc	43.963	10.351	11/00	7.156	11/01	4.909	11/02		66.379	
Subtotal Product Development			147.368	74.962		45.694		30.290		Continuing	Continuing	
<p>Remarks:</p> <p>LPIA - BAE Systems Contract is a Cost Share Contract and does not have a Target Value. This contract has been changed from a CPIF to a Cost Share with a total liability to the government of \$7,264.</p>												
Miscellaneous	Misc	Misc	14.392	3.574	11/00	3.520	11/01	1.542	11/02	Continuing	Continuing	
Subtotal Support			14.392	3.574		3.520		1.542		Continuing	Continuing	
<p>Remarks:</p>												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
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
Systems T&E/OT&E	WX	NAWC PAX	1.733								1.733	
Miscellaneous	Misc	Misc	15.939	3.127	Various	3.096	Various	1.244	Various	Continuing	Continuing	
Subtotal T&E			17.672	3.127		3.096		1.244		Continuing	Continuing	
Remarks:												
SBIR						1.633					1.633	
Subtotal Management						1.633					1.633	
Remarks:												
Total Cost			179.432	81.663		53.943		33.076		Continuing	Continuing	
Remarks:												

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 23 of 23)

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604216N Multi-Mission Helicopter Upgrade Development					
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	693.584		78.386*	148.068	88.969	52.199	21.053	0.362	0.428	0.000	1,083.049
H1707 MMH Upgrade Development	693.584		78.386*	135.381	88.969	52.199	21.053	0.362	0.428	0.000	1,070.362
H3053 MH-60S AMCM				12.687							12.687
Quantity of RDT&E Articles	2										2
<p>From program inception through FY99, the program was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.</p> <p>*The FY 2001 budget reflects a \$5M Congressional add for ATIRCM/CMWS Integration and a \$4M Congressional add for Advanced Threat Infrared Countermeasures which were reduced by \$.206M and \$.036M respectively for Congressional Undistributed adjustments.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The MH-60R Multi-Mission Helicopter Upgrade Development provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter Upgrade Development represents a significant avionics modification to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added Multi-Mode Radar includes an Inverse Synthetic Aperture Radar mode (ISAR) (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measures system (ESM) will enable passive detection and targeting of radar sources not currently detectable. FY01 and FY02 reflect remanufacture of MH-60R. FY03 and out reflects a new production procurement strategy.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering & 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-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Development					PROJECT NUMBER AND NAME H1707 MMH Upgrade Development					
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	693.584		78.386	135.381	88.969	52.199	21.053	0.362	0.428	0.000	1,070.362
RDT&E Articles Qty	2										2

From program inception through FY99, the program was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.

*The FY 2001 budget reflects a \$5M Congressional add for ATIRCM/CMWS Integration and a \$4M Congressional add for Advance Threat Infrared Countermeasures which were reduced by \$.206M and \$.036M respectively for Congressional Undistributed adjustments.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The MH-60R Multi-Mission Helicopter Upgrade Development provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter Upgrade Development represents a significant avionics modification to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added Multi-Mode Radar includes an Inverse Synthetic Aperture Radar mode (ISAR) (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measures system (ESM) will enable passive detection and targeting of radar sources not currently detectable. FY01 and FY02 reflect remanufacture of MH-60R. FY03 and out reflects a new production procurement strategy.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 Accomplishments:

- (U) (\$46.686) EMD Phase I and II: Continued ESM development and design of operator/tactical assistance software programs and integrated self-defense suite. Continued system software development and support DT-IIC and ALFS Operational testing. Conducted Test Readiness Review (TRR) and continued test flights of Test Article aircraft. Continued procurement of management, manufacturing, material, and engineering labor associated with Test Articles avionics. Supported an Acquisition Baseline Review.
- (U) (\$12.681) Conducted DT-IIB and DT-IIC testing for MH-60R. Tested a prototype aircraft and concentrated on Acoustics (including ALFS), Radar ESM, and Common Cockpit. Testing supported LRIP II procurement decision.
- (U) (\$2.696) Continued avionics hardware updates, integration and testing, production test equipment development, Integrated Logistics Support, Engineering, and Testing.
- (U) (\$1.022) Procured Test Articles support, GFE repair, parts support, and maintenance of test articles.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development
<ul style="list-style-type: none"> - (U) (\$3.999) Engineering and Logistics evaluated and analyzed for impacts to the MH-60R design on Dynamic Component life. Built test coupons and performed certification testing. Conducted instrumented ground and flight tests. - (U) (\$2.544) Continued documentation and processed requirements for multiple LRIP reviews. Continued Navy logistics, systems engineering and test support, program management and travel. Supported requirements for Test Article aircraft including aircraft maintenance, trainer systems development, Integrated Logistics Support, and field activity support. - (U) (\$4.794) (Congressional Add) Completed ATIRCM/CMWS integration on the MH-60R. Performed integration of Common Missile Warning System to include sensor alignment/sensor placement study for MH-60R mission profiles, and modification of existing ARMY threat data for over water and Littoral threats. Performed risk reduction efforts to incorporate integrated Advanced Tactical Infrared-Red Counter Measures. - (U) (\$3.964) (Congressional Add) Performed integration of ATIRCM into the MH-60R. Effort included installation and testing of dual LASER/dual Jam-Head arrangement and programming and testing of User Defined Module (UDM) for aircraft threats over water. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$74.200) EMD Phase I and II: Continue system software and hardware development and integration to include: RADAR mode development, ESM development, acoustics and post processing, mission planning, weapons, stores and self defense, data fusion, logistics products including Integrated Electronic Technical Manuals, boresighting equipment and integration. Support aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations and repairs in support of the test program. Provide ILS support, Program Management support, Risk Management Board support, and subvendor support. - (U) (\$12.400) Airframe test articles, GFE repair, and risk management board support. Procurement of Digital Mock-up and weight reduction studies, Integrated Self Detection integration development and vibration testing. Complete and deliver test article aircraft. - (U) (\$9.150) Provide engineering specialties, Integrated Logistics Support, Contractor Services Support, System Engineering, Program Management and Travel as required to support the MH-60R developmental program and test activities (DT-IIC). - (U) (\$17.050) Continue testing of MH-60R and its mission avionics. - (U) (\$5.100) Continue Acoustics (including ALFS) development, integration and testing. Correct deficiencies encountered during testing and integration in order to support DT-IID. - (U) (\$13.000) Continue engineering and Logistics evaluation and analysis of impacts to the MH-60R design on Dynamic Component life. Continue to build test coupons and perform certification testing. Continue to conduct instrumented ground and flight tests. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	February 2002
PROJECT NUMBER AND NAME H1707 MMH Upgrade Development		
<p>- (U) (\$4.483) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638.</p> <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (\$53.521) EMD Phase II: Continue system software and hardware development and integration to include: RADAR mode development, ESM development, acoustics and post processing, mission planning, weapons, stores and self defense, data fusion, logistics products development including IETMs, boresighting equipment and integration. Continue to support aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations and repairs in support of the test program. Continue to provide ILS support, Program Management support, Risk Management Board support and subvendor support.- (U) (\$9.900) Continue Airframe test articles, GFE repair, and risk management board support. Support TECHEVAL, provide ILS support and correct deficiencies found during testing.- (U) (\$8.848) Continue to provide engineering specialties, Integrated Logistics Support, Contractor Services Support, Systems Engineering, Program Management, and Travel as required to support the MH-60R developmental program and test activities (DT-IID & OT-IIA).- (U) (\$16.200) Continue developmental and operational testing of MH-60R and it's mission avionics.- (U) (\$.500) Continue Acoustics processor (including ALFS) development, integration and testing. Correct deficiencies encountered during testing and integration in order to support TECHEVAL & OPEVAL.		

R-1 SHOPPING LIST - Item No. 97

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 4 of 13)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5	0604216N Multi-Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
(U) B. PROGRAM CHANGE SUMMARY:										
	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>							
(U) FY 2002 President's Budget:	83.115	136.618								
(U) Adjustments from the FY 2002 President's Budget:	-4.729	-1.237								
(U) FY2003 President's Budget Submit:	78.386	135.381	88.969							
CHANGE SUMMARY EXPLANATION:										
<p>(U) Funding: The FY 2001 net decrease of \$4.729 million reflects a decrease of \$5.000 million for TADIRCM, a decrease of \$2.133 million for Small Business Innovation Research assessment, and a decrease of \$1.595 million for reprioritization of requirements within the Navy offset by an increase of \$3.999 for Dynamic Components. The FY2002 net decrease of \$1.237 reflects a decrease of \$1.210 million for undistributed congressional reduction and a decrease of \$.030 million for reprioritization of requirements within the Navy.</p> <p>(U) Schedule: Schedule changes are due to program restructure and a new acquisition strategy to build new production aircraft vice remanufacture.</p> <p>(U) Technical: Not Applicable.</p>										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>Prior Years</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total</u>
APN-1 (BLI -018200)	223.328	53.676	9.933	116.212	392.768	397.215	409.733	419.567	5919.588	7942.020
APN-6 Initial Spares (BLI-060510)	12.263	0.000	0.000	0.000	59.814	65.018	52.580	52.924	5.600	248.199
Related RDT&E										
(U) PE 0604507N Enhanced Modulare Signal Processor										
(U) PE 0604261N Acoustic Search Sensors										
(U) PE 0604212N ASW & Other Helo Development (TCDL)										

R-1 SHOPPING LIST - Item No. 97

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 5 of 13)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	PE 0604216N Multi-Mission Helicopter Upgrade Dev	H1707 MMH Upgrade Development	
<p>(U) D. ACQUISITION STRATEGY: The contracting plan for Common Cockpit was changed from a Federal Acquisition Regulation contract to a Section 845 Other Transaction. In FY99, the program was restructured to allow two prime contractors for the LRIP and Test Articles. A sole source contract was awarded to Sikorsky for the Air Vehicle portion and Lockheed Martin Systems Integration for the avionics integration.</p> <p>(U) E. SCHEDULE PROFILE:</p>			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
			<u>TO COMPLETE</u>
(U) Program Milestones			Milestone III 3Q/05 IOC 4Q/05
(U) Engineering Milestones	TRR#2 3Q/01		OTRR (OPEVAL) 3Q/04
(U) T&E Milestones	DT-IIB 2Q/00-2Q/01 DT-IIC 3Q/01-4Q/02	Complete DT-IIC 4Q/02	DT-IID 1Q/03-3Q/03 OTIIA 2Q/03-3Q/03 TECHEVAL 1Q/04-2Q/04 OPEVAL 3Q/04-1Q/05
(U) Contract Milestones		LMSI EMD II REPLAN 1Q/02	

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
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
Engineering Support	WX	NAWC-AD PAX (Warm, PA)	32.580								32.580	
Engineering Support	RX	NAWC-AD PAX	6.266	2.134	12/00	2.567	12/01	3.322	12/02	2.526	16.815	
Integrated Logistics Support	WX	Cherry Point, Lakehurst	5.395	0.562	11/00	1.941	03/02	1.376	12/02	1.206	10.480	
Integrated Logistics Support	RX	Cherry Point, Lakehurst	0.070								0.070	
Training Support	RX/WX	NUWC/NAWC-AD PAX	1.371								1.371	
Other FY93 & Prior Year Cost	MISC	MISC Activities	46.260								46.260	
GFE - FLIR	RX	NSWC Crane, Indy	4.214								4.214	
GFE - AVR-2 Laser Interface Unit	MIPR	Army, Ft. Monmouth, NJ	1.636								1.636	
GFE- M299 Missile Launcher	MIPR	Redstone Arsenal	0.257								0.257	
Misc GFE Milstrips	Reqn	NAVICP	0.333								0.333	
GFE - Tester	WX	Crane	0.060								0.060	
GFE - Pyton Interface Unit	WX	Crane	0.500								0.500	
GFE - ALE-47 Countermeasures	WX/MIPR	Crane/Robins AFB	0.138								0.138	
COTS AP Engineering (H2631)	WX	NAWC-AD PAX	0.517								0.517	
SGS Equipment (H2633)	WX/RX	MISC Activities	0.969								0.969	
PADS Engineering Support (H2414)	WX/RX	MISC Activities	6.351								6.351	
AIC Engineering Support (H2413)	WX	NAWC-AD PAX	3.148								3.148	
AIC Engineering Support (H2413)	RX	NAWC-AD PAX	1.570								1.570	
Subtotal Support			111.635	2.696		4.508		4.698		3.732	127.269	
Remarks: NSWC Crane, Indy for \$2.6M adds into the TOTAL but doesn't print in the TOTAL Cost Column.												

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 8 of 13)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
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	NAWC-AD, Pax River	19.622	8.983	10/00	15.483	11/01	14.663	11/02	20.804	79.555	
Operational Test & Evaluation	WX	NAWC-AD, Pax River	0.031	0.930	10/00	1.167	11/01	1.404	11/02	2.250	5.782	
Live Fire Test & Evaluation	WX	NAWC-WD, China Lake		0.787	10/00	0.400	11/01	0.133	11/02	0.096	1.416	
Developmental Test & Evaluation	WX	SNWSC-San Diego		0.035	10/00						0.035	
Subtotal T&E			19.653	10.735		17.050		16.200		23.150	86.788	
Remarks:												
Engineering Support (FFRDC)	MIPR	CECOM, Ft. Monmouth, NJ	2.452	0.711	12/00	0.669	01/02	0.309	12/02	0.256	4.397	
Government Engineering Support	WX	NAWC-AD Pax River	1.783	0.527	11/00	3.041	01/02	2.209	11/02	0.857	8.417	
Program Management Support	RX	MISC Activities	2.362	0.822	12/00	0.109	01/02	1.106	12/02	0.647	5.046	
PADS Management Support	RX	MISC Activities	1.081								1.081	
COTS AP Engineering (FFRDC)	MIPR	CECOM, Ft. Monmouth, NJ	0.063								0.063	
Travel	WX	NAWC-AD Pax River	1.474	0.943	10/00	0.753	10/01	0.526	10/02	1.500	5.196	
SBIR Assessment						4.551					4.483	
Subtotal Management			9.215	3.003		9.123		4.150		3.260	28.751	
Remarks:												
Total Cost			693.584	78.386		135.381		88.969		74.042	1,070.362	
Remarks:												

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 9 of 13)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604216N Multi-Mission Helicopter Upgrade Development					H3053 MH-60S AMCM					
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				12.687							12.687
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: N/A</p> <p>2. FY 2002 PLANS:</p> <p style="padding-left: 40px;">-(U) (\$12.687) Modification of MH-60S aircraft to support AMCM test and evaluation activities.</p> <p>3. FY 2003 PLANS: N/A</p>											

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EXHIBIT R-2a, RDT&E Project Justification			DATE:					
			February 2002					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME						
RDT&E, N / BA-5	0604216N Multi-Mission Helicopter Upgrade Development	H3053 MH-60S AMCM						
 (U) B. PROGRAM CHANGE SUMMARY:								
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget Submit:		12.800						
(U) Adjustments from the FY 2002 President's Budget:		-0.113						
(U) FY 2003 President's Budget Submit:		12.687						
 CHANGE SUMMARY EXPLANATION:								
(U) Funding: FY 2002 reflects a decrease of \$.113 million for an undistributed Congressional reduction.								
(U) Schedule: Not applicable								
(U) Technical: Not applicable								
 (U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>
017900 APN-1 MH-60S	283.821	254.031	372.155	384.157	445.996	551.736	595.468	1,607.030
AMCM (Included in numbers above)		9.504	18.000	46.264	41.779	35.260	42.949	98.255
060510 APN-6 MH-60S	29.873	19.280	0.000	23.604	0.549	0.533	0.561	0.000
0604212N, H2415, MH-60S Development	30.807	41.721	23.241	20.158	13.056	11.987	6.198	Continuing
 (U) D. ACQUISITION STRATEGY:								
 (U) E. SCHEDULE PROFILE: See MH-60S Development schedule in PE 0604212N, PU H2415								

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Development				PROJECT NUMBER AND NAME H3053 MH-60S AMCM					
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
MH-60S NRE and Modifications	SS/CPAF	Sikorsky, Stratford, CT				12.687	3/02				12.687	12.687
Subtotal Product Development						12.687					12.687	12.687
Remarks:												
Subtotal Support												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Development				PROJECT NUMBER AND NAME H3053 MH-60S AMCM					
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
Subtotal T&E												
Remarks:												
Subtotal Management												
Remarks:												
Total Cost						12.687					12.687	
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604217N S-3 Weapon System Improvement					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	37.156		0.435	0.424	0.422						38.437
H0489 S-3 WSIP	37.156		0.435	0.424	0.422						38.437
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The current program provides continuation of a series of progressive modular improvements which began with the S-3 Weapons System Improvement Program (WSIP) Phase I (S-3A modified to S-3B configuration). Based upon the S-3 WSIP Operational Requirement, the full program achieves the required multi-mission operational capability through continuous time-phased, selective mission avionics processing upgrades that are pursued in priority order. Initial Nunn-funded development focused on the Co-Processor Memory Unit (CPMU) hardware, a joint U.S./Canadian industrial base development program which provides the core processing capability and open architecture required for future modular S-3B modification. This program will complete CPMU integration and test and rewrite existing Tactical Mission Program (TMP) code into Ada higher-order language. Ada TMP development and CPMU integration will be leveraged to provide for sensor and connectivity enhancements in conjunction with the S-3B Surveillance System Upgrade (SSU) Project.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and 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-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604217N CSA Development				PROJECT NUMBER AND NAME H0489 S-3 WSIP					
COST (\$ in Millions)	Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program	
Project Cost	37.156	0.435	0.424	0.422						38.437	
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The current program provides continuation of a series of progressive modular improvement which began with the S-3B Weapon System Improvement Program (WSIP) Phase I (S-3A modified to S-3B configuration). Based upon the S-3 WSIP Operational Requirement, the full program achieve the required multi-mission operational capability through continuous time-phased, selective mission avionics/processing upgrades that are pursued in priority order. Initial Nunn-funded development focused on the Co-Processor Memory Unit (CPMU) hardware, a joint U.S./Canadian industrial base development program, which provides the core processing capability and open architecture required for future modular S-3B modification. This program will complete CPMU integration and test and rewrite existing Tactical Mission Program (TMP) code into Ada higher order language. Ada TMP development and CPMU integration will be leveraged to provide for sensor and connectivity enhancements in conjunction with the S-3B Surveillance System Upgrade (SSU) project.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: (U) (\$.435) Initiated support of Ada operational software testing.</p> <p>2. FY 2002 PLANS: (U) (\$.411) Continue support of Ada operational software development and testing. (U) (\$.013) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>3. FY 2003 PLANS: (U) (\$.422) Complete support of Ada operational software development and testing.</p>											

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604217N CSA Development			PROJECT NUMBER AND NAME H0489 S-3 WSIP																																																				
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> <th colspan="4"></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">0.450</td> <td style="text-align: center;">0.428</td> <td></td> <td colspan="4"></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">-0.015</td> <td style="text-align: center;">-0.004</td> <td></td> <td colspan="4"></td> </tr> <tr> <td>(U) FY2003 President's Budget Submit:</td> <td style="text-align: center;">0.435</td> <td style="text-align: center;">0.424</td> <td style="text-align: center;">0.422</td> <td colspan="4"></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2001 net decrease of \$.015 million consists of a decrease for a Small Business Innovative Research Assessment (\$.016M) offset by increased requirements for the S-3 Weapon System Improvement program (\$001M). The FY2002 net decrease of \$.004 million consists of a decrease for an undistributed congressional reduction.</p> <p>(U) Schedule: Not Applicable.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">To Complete</th> </tr> </thead> <tbody> <tr> <td>APN S-3 OSIP (04-96)</td> <td style="text-align: center;">10.135</td> <td style="text-align: center;">5.429</td> <td style="text-align: center;">2.529</td> <td style="text-align: center;">0.110</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>									<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					(U) FY 2002 President's Budget:	0.450	0.428						(U) Adjustments from the FY2002 President's Budget:	-0.015	-0.004						(U) FY2003 President's Budget Submit:	0.435	0.424	0.422					<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	APN S-3 OSIP (04-96)	10.135	5.429	2.529	0.110	0	0	0	0
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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 3 of 4)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604217N CSA Development	PROJECT NUMBER AND NAME H0489 S-3 WSIP																											
<p>(U) D. ACQUISITION STRATEGY: The Operational Requirements Document (ORD) was signed on 27 March 1997. The Acquisition Plan was number 90-14 and was approved on 17 October 1994. The contract is a Cost Plus Fixed Fee (CPFF) and was awarded to Lockheed Martin, Eagan, MN on 28 July 1995.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td style="text-align: center;">1Q/01 ADA Fleet Introduction</td> <td></td> <td style="text-align: center;">IOC 2Q/03</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td style="text-align: center;">1Q/01 ADA OT&E Start</td> <td style="text-align: center;">1Q/02-4Q/02 ADA OT&E Continue</td> <td style="text-align: center;">1Q/03 ADA OT&E Complete</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	1Q/01 ADA Fleet Introduction		IOC 2Q/03		(U) Engineering Milestones					(U) T&E Milestones	1Q/01 ADA OT&E Start	1Q/02-4Q/02 ADA OT&E Continue	1Q/03 ADA OT&E Complete		(U) Contract Milestones				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones	1Q/01 ADA Fleet Introduction		IOC 2Q/03																										
(U) Engineering Milestones																													
(U) T&E Milestones	1Q/01 ADA OT&E Start	1Q/02-4Q/02 ADA OT&E Continue	1Q/03 ADA OT&E Complete																										
(U) Contract Milestones																													

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment									
	4,325	4,743	4,182	4,236	4,201	4,180	4,296	CONT.	CONT.
X2346 METOC Sensor Engineering									
	1,464	1,547	1,543	1,600	1,627	1,661	1,699	CONT.	CONT.
TOTAL	5,789	6,290	5,725	5,836	5,828	5,841	5,995	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Air/Ocean Equipment Engineering (AOEE) Program Element provides for the engineering and manufacturing development of onboard and remote sensors, communication interfaces, and processing and display devices. This equipment is specifically designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters essential to the optimum employment of Naval warfare systems. AOEE also develops increased capabilities for shipboard and shore based tactical systems. In addition, AOEE provides for the engineering development of specialized equipment and measurement techniques to obtain METOC data in denied and remote areas.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

R-1 Shopping List - Item No 99 (1) of 99 (12)

Exhibit R-2, RDT&E,N Budget Item Justification

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

(U) COST (Dollars in thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment	4,325	4,743	4,182	4,236	4,201	4,180	4,296	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of sensors, communication interfaces, and processing and display equipment. This equipment is designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters and derived products. Major emphasis areas include the Tactical Environmental Support System (TESS), and the associated Navy Integrated Tactical Environmental Subsystem (NITES), the Marine Corps Meteorological Mobile Facility (METMF), the AN/SMQ-11 satellite receiver/recorder, weather radars, and the development of new sensors such as active and passive atmospheric profilers for incorporation into the replacement system (MORIAH) for the Shipboard Meteorological and Oceanographic Observing System (SMOOS). This project also exploits new GOTS/COTS technologies and web enablement for the Navy's computer-based tactical shipboard and shore capability used to predict and assess the impact of the operating environment on the performance of platforms, weapons and sensor systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,278) Completed engineering development of a data exchange interface. Began engineering development of an object oriented database management system employing artificial intelligence technology.
- (U) (\$1,260) Continued engineering development of fleet systems.
- (U) (\$715) Continued Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,072) Continued exploitation of off-the shelf prototype hardware and other emerging technologies.

R-1 Shopping List - Item No 99 (2) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

2. (U) FY 2002 PLAN:

- (U) (\$1,450) Continue engineering development of an object oriented database management system employing artificial intelligence technology.
- (U) (\$1,520) Continue engineering development of fleet systems.
- (U) (\$750) Continue Lead Laboratory tasks of software integration, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,023) Continue exploitation of off-the-shelf prototype hardware and other emerging technologies.

3. (U) FY 2003 PLAN:

- (U) (\$1,189) Complete engineering development of an object oriented database management system employing artificial intelligence technology. Transition to web-enabled high-speed battlegroup data server.
- (U) (\$1,239) Continue engineering development of fleet systems.
- (U) (\$654) Continue Lead Laboratory tasks of software integration, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,100) Continue exploitation of off-the-shelf prototype hardware and other emerging technologies.

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding: FY 2001 adjustments are due to Section 8086 .7% Pro-rata Reduction (-32), .22% Government Wide Rescission P.L 106-554, Sec 1403 (-10), Miscellaneous Navy Adjustments (-80), FY01 SBIR Assessment Apr-27-01(-67).

R-1 Shopping List - Item No 99 (3) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY2007 Estimate	To Complete	Total Program
(U) OPN line 4226	24,328	28,437	26,474	27,474	26,694	28,679	30,041	CONT.	CONT.
(U) RELATED RDT&E: PE 0603207N, Air/Ocean Tactical Applications.									

D. (U) ACQUISITION STRATEGY: Not applicable.

R-1 Shopping List - Item No 99 (5) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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Exhibit R-3 Proejct Cost Analysis (page 1)							Date: February 02					
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5			PROGRAM ELEMENT: o604218N				PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development												
	WX	NRL	3,122	1,183	N/A	832	N/A	1,215	N/A	CONT	CONT	CONT
	WX	SSCs	1,200	470	N/A	400	N/A	775	N/A	CONT	CONT	CONT
	CP	RAYTHEON	400	225	N/A	200	N/A	235	N/A	CONT	CONT	CONT
	N/A	MISC	2,473	2,237	N/A	3,176	N/A	1,739	N/A	CONT	CONT	CONT
Subtotal Product Development			7,195	4,115	N/A	4,608	N/A	3,964	N/A	CONT	CONT	CONT
Remarks:												
Support	CP	SSA	775	150	N/A	75	N/A	156	N/A	CONT	CONT	CONT
Subtotal Support			775	150	N/A	75	N/A	156	N/A	CONT	CONT	CONT
Remarks												

UNCLASSIFIED

Exhibit R-3 Project Cost Analysis (page 2)										Date: February 02		
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5				PROGRAM ELEMENT: 0604218N			PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
T&E	PD	OPTEVFOR	120	60	N/A	60	N/A	62	N/A			
Subtotal T&E			120	60	N/A	60	N/A	62	N/A			
Remarks												
Subtotal Management												
Remarks												
Total Cost			8,090	4,325	N/A	4,743	N/A	4,182	N/A	CONT	CONT	CONT
Remarks												

UNCLASSIFIED

EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

(U) COST (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2346 METOC Sensor Engineering	1,464	1,547	1,543	1,600	1,627	1,661	1,699	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of specialized, high resolution instrumentation systems and measurement techniques for obtaining near real-time in-situ meteorological and oceanographic (METOC) data in denied or remote areas. The objectives are to ruggedize and package systems, sensors and instruments to survive the harsh littoral environment and also to meet demanding requirements for timeliness and accuracy. Engineering is performed within this project to ensure that air and safety certification for deployment from fleet aircraft or ships is met and that the proper data formats are employed for integration into existing or planned communications and displays. The end products are sensors and systems that will provide the tactical commander with near real-time, in-situ METOC data for operational use. In addition, this difficult to obtain data will provide important inputs for predictive models in areas of potential interest.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$539) Began engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$500) Continued development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical Sensor (MEMS).
- (U) (\$425) Continued development of MEASURE.

R-1 Shopping List - Item No 99 (8) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

2. (U) FY 2002 PLAN:

- (U) (\$444) Continue engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$388) Complete development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$400) Continue development of MEASURE.
- (U) (\$315) Begin engineering development of intelligent sensor suite for Unmanned Undersea Vehicles.

3. (U) FY 2003 PLAN:

- (U) (\$423) Continue engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$400) Begin engineering development of autonomous clandestine sensors for measurements in denied areas.
- (U) (\$400) Continue development of MEASURE.
- (U) (\$320) Continue engineering development of intelligent sensor suite for Unmanned Undersea Vehicles.

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding: FY 2001 adjustments are due to Section 8086 .7% Pro-rata Reduction (-11), Miscellaneous Navy adjustments (-27), FY01 SBIR Assessment Apr-27-01 (-32), .22% Government wide rescission, P.L. 106-554, Sec 1403 (-3).

R-1 Shopping List - Item No 99 (9) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

UNCLASSIFIED

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Exhibit R-3 Project Cost Analysis (page 1)								Date: February 02				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5			PROGRAM ELEMENT: o604218N					PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	WX	NRL	1,150	51	N/A	60	N/A	53	N/A	CONT	CONT	
	N/A	MISC	2,138	1,413	N/A	1,487	N/A	1,490	N/A	CONT	CONT	
Subtotal Product Development			3,288	1,464	N/A	1,547	N/A	1,543	N/A	CONT	CONT	
Remarks:												
Subtotal Support												
Remarks												

UNCLASSIFIED

Exhibit R-3 Project Cost Analysis (page 2)								Date: February 02				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5			PROGRAM ELEMENT: 0604218N					PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal T&E												
Remarks												
Subtotal Management												
Remarks												
Total Cost			3,288	1,464	N/A	1,547	N/A	1,543	N/A	CONT	CONT	
Remarks												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604221N P-3 Modernization Program					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost			7.123 [*]	3.192	2.348	3.259	2.495	2.536	2.581	Continuing	Continuing
H1152 P-3 Sensor Integration			7.123 [*]	3.192	2.348	3.259	2.495	2.536	2.581	Continuing	Continuing
Quantity of RDT&E Articles	Not Applicable										
<p>* The FY 2001 budget reflects an \$4.500 million Congressional add for APS-137 radar upgrades executed under H2876, which has been revised by \$.224 million for a Small Business Innovative Research Assessment.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides upgrades to P-3C aircraft systems to enhance surface and subsurface tracking and classification; attack capabilities including Specific Emitter Identification (SEI); and improved APS-137 radar tracking and upgrades. The P-3C Sensor Integration project develops software necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software development of P-3 systems to integrate additional sensors, tactical decision aids, and color capabilities to improve aircrew tactical proficiency and awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW technologies such as the Advanced Extended Echo Ranging (AEER) system, Shallow Water ASW Localization and Attack System (SWALAS) and Tactical Acoustic Measurement and Decision Aids (TAMDA) Program.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 100

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604221N P-3 Modernization Program					H1152 P-3 Sensor Integration					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			7.123	3.192	2.348	3.259	2.495	2.536	2.581	Continuing	Continuing
RDT&E Articles Qty											

* The FY 2001 budget reflects an \$4.500 million Congressional add for APS-137 radar upgrades executed under H2876, which has been revised by \$.224 million for a Small Business Innovative Research Assessment.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides upgrades to P-3C aircraft systems to enhance surface and subsurface tracking and classification; attack capabilities including Specific Emitter Identification (SEI); and improved APS-137 radar tracking and upgrades. The P-3C Sensor Integration project develops software necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software development of P-3 systems to integrate additional sensors, tactical decision aids, and color capabilities to improve aircrew tactical proficiency and awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW technologies such as the Advanced Extended Echo Ranging (AEER) system, Shallow Water ASW Localization and Attack System (SWALAS) and Tactical Acoustic Measurement and Decision Aids (TAMDA) Program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$.447) Continued system engineering support for integration of Improved Extended Echo Ranging (IEER) system.
- (U) (\$1.718) Continued IEER integration and flight testing.
- (U) (\$.750) Provided Aviation Depot Level Repairable (AVDLR) for P-3 test aircraft.
- (U) (\$4.208) Upgraded the APS-137 radar.

2. FY 2002 PLANS:

- (U) (\$.410) Continue system engineering support for integration of IEER system and initiate engineering support of Advance Exstended Echo Ranging (AEER).
- (U) (\$1.784) Complete IEER integration, fleet delivery, and flight testing and initiate AEER software development.
- (U) (\$.901) Provide AVDLR for P-3 test aircraft.
- (U) (\$.097) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. FY 2003 PLANS:

- (U) (\$1.419) Continue system engineering support for integration of AEER system and initiate engineering support of SWALAS and TAMDA.
- (U) (\$.324) Deliver IEER and continue AEER software development and integration.
- (U) (\$.605) Provide AVDLR for P-3 test aircraft.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604221N P-3 Modernization Program	PROJECT NUMBER AND NAME H1152 P-3 Sensor Integration																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY2002 President's Budget:</td> <td style="text-align: center;">7.333</td> <td style="text-align: center;">3.220</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">-0.210</td> <td style="text-align: center;">-0.028</td> <td></td> </tr> <tr> <td>(U) FY2003 President's Budget Submit:</td> <td style="text-align: center;">7.123</td> <td style="text-align: center;">3.192</td> <td style="text-align: center;">2.348</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2001 net decrease of \$0.210 million consists of a decrease of \$0.224 million for a Small Business Innovative Research Assessment offset by an increase of \$0.014 million for IEER integration and flight testing. The FY2002 net decrease of \$0.028 million consists of a decrease for an undistributed congressional reduction.</p> <p>(U) Schedule: IEER Fleet Delivery slipped to 2Q/03 as a result of Fleet identifying support requirements that need to be met before fielding system. IEER DT III was rescheduled to 3Q/01 and IEER OT III was rescheduled to 2Q/02 to accommodate additional software development and testing. COTF and VX-1 will conduct an operational assessment of IEER in the 2QFY02. Engineering Support of SWALAS/TAMDA to commence 1QFY03.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY2002 President's Budget:	7.333	3.220		(U) Adjustments from the FY2002 President's Budget:	-0.210	-0.028		(U) FY2003 President's Budget Submit:	7.123	3.192	2.348
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY2002 President's Budget:	7.333	3.220																
(U) Adjustments from the FY2002 President's Budget:	-0.210	-0.028																
(U) FY2003 President's Budget Submit:	7.123	3.192	2.348															

R-1 SHOPPING LIST - Item No. 100

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																											
RDT&E, N / BA-5	0604221N P-3 Modernization Program	H1152 P-3 Sensor Integration																											
<p>(U) D. ACQUISITION STRATEGY: The Air Deployable Active Receiver/Improved Extended Echo Ranging (IEER) Operational Requirements Document (Ser# 297(1)-05-97)) for H1152 was approved on 29 December 1997. The P-3 ASUW Improvement Program (AIP) ORD (Ser# 355-88-94) for H2417 was approved on 30 March 1994. The Acquisition Plan (AIR-93-08A Rev 2) was approved on 30 March 1998.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>1Q/01 Radar Upgrade IOC</td> <td>2Q/02 IEER Operational Assesment (OA)</td> <td>2Q/03 IEER Fleet Delivery</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>1Q-4Q/02 AEER P-3C Software Development</td> <td>1Q-4Q/03 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA engineering support</td> <td>1Q-4Q/04 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA P-3C Software Development</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>3Q/01-4Q/01 IEER DT III</td> <td>1Q/02 IEER DT III Complete 2Q/02 IEER OT III</td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	1Q/01 Radar Upgrade IOC	2Q/02 IEER Operational Assesment (OA)	2Q/03 IEER Fleet Delivery		(U) Engineering Milestones		1Q-4Q/02 AEER P-3C Software Development	1Q-4Q/03 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA engineering support	1Q-4Q/04 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA P-3C Software Development	(U) T&E Milestones	3Q/01-4Q/01 IEER DT III	1Q/02 IEER DT III Complete 2Q/02 IEER OT III			(U) Contract Milestones				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones	1Q/01 Radar Upgrade IOC	2Q/02 IEER Operational Assesment (OA)	2Q/03 IEER Fleet Delivery																										
(U) Engineering Milestones		1Q-4Q/02 AEER P-3C Software Development	1Q-4Q/03 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA engineering support	1Q-4Q/04 AEER Software Development 1Q-4Q/03 SWALAS/TAMDA P-3C Software Development																									
(U) T&E Milestones	3Q/01-4Q/01 IEER DT III	1Q/02 IEER DT III Complete 2Q/02 IEER OT III																											
(U) Contract Milestones																													

R-1 SHOPPING LIST - Item No. 100

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 4 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604221N P-3 Modernization Program			H1152 P-3 Sensor Integration						
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
Hardware Development	C/FP	Raytheon, McKinney, Tx	2.217	4.208	01/01						6.425	6.425
Subtotal Product Development			2.217	4.208							6.425	
Remarks:												
Software Development	C/FP	Raytheon, McKinney, Tx	5.781								5.781	5.781
Software Development	C/FP	Raytheon, McKinney, Tx	1.998								1.998	1.998
Software Development	SS/FP	LMNESS, Egan, MN	14.561								14.561	14.561
Systems Engineering	Various	Various	25.877	1.101	12/00	1.181	12/01	1.067	12/02	Continuing	Continuing	
Subtotal Support			48.217	1.101		1.181		1.067		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 100

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604221N P-3 Modernization Program				H1152 P-3 Sensor Integration					
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	NAWCAD, Pax River, MD	5.572	0.764	12/00	0.901	12/01	0.605	12/02	Continuing	Continuing	
Subtotal T&E			5.572	0.764		0.901		0.605		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	C/FP	RBC, Arlington, VA	3.716	0.447	12/00	0.410	12/01	0.352	12/02	2.860	7.785	7.785
Government Engineering Support	WX	NAWCAD, Pax River, MD	1.060	0.603	12/00	0.603	12/01	0.324	12/02	Continuing	Continuing	
SBIR ASSESSMENT						0.097					0.097	
Subtotal Management			4.776	1.050		1.110		0.676		Continuing	Continuing	
Remarks:												
Total Cost			60.782	7.123		3.192		2.348		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 100

UNCLASSIFIED

Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 6 of 6)

UNCLASSIFIED

EXHIBIT R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N
 (U) COST: (Dollars in Thousands) PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
E2213 Mission Planning	18,173	20,759	24,644	17,244	11,003	17,148	10,102	CONT.	CONT.
X0486 GCCS-M Tactical/Mobile	1,428	1,613	1,470	1,720	1,503	1,535	1,534	CONT.	CONT.
X0709 GCCS-M Maritime Applications	6,263	7,194	5,956	9,750	7,462	9,628	8,779	CONT.	CONT.
X2009 Trusted Information Systems (formerly JMCIS OED)	5,581	3,904	2,973	3,039	3,068	4,095	3,625	CONT.	CONT.
X0521 GCCS-M Intelligence Applications	6,495	6,538	3,610	3,404	3,661	4,018	4,095	CONT.	CONT.
X2305 GCCS-M Common Applications	10,402	10,421	12,808	14,151	11,095	15,450	11,886	CONT.	CONT.
X2306 Naval Simulation System	4,710	4,989	3,396	2,840	2,213	1,342	473	CONT.	CONT.
X2307 Integrated Shipboard Network System	4,547	3,923	1,602	1,359	2,075	1,512	1,408	CONT.	CONT.
X3032 NTCSS Enterprise Database & MLDN	0	3,928	5,016	4,308	4,059	2,949	3,513	CONT.	CONT.
X9123 FORCEnet	0	0	20,000	20,000	20,000	0	0	0	0
TOTALS	57,599	63,269	81,475	77,815	66,139	57,677	45,415	CONT.	CONT.

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Exhibit R-2, Budget Item Justification

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EXHIBIT R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N
 PROGRAM ELEMENT TITLE: Tactical Command System

(U) COST (Continued): (Dollars in Thousands)
Defense Emergency Response Fund (DERF)/Cost of War (COW)

PROJECT NUMBER TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
E2213	Mission Planning	0	0	6,500	9,300	0	0	CONT.	CONT.
X0709	GCCS-M Maritime Applications	0	0	1,000	625	0	0	CONT.	CONT.
X2009	Trusted Information Systems	0	0	750	0	0	0	CONT.	CONT.
X2305	GCCS-M Common Applications	0	6,000	150	153	156	159	CONT.	CONT.
Defense Emergency Response Funding (DERF) Total (Non Add):									
	0	6,000	0	8,400	10,078	156	159	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Command System (TCS) upgrades the Navy's Command, Control, Computer and Intelligence (C³I) systems and processes C³I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises. A major component of the TCS is the Global Command and Control System - Maritime (GCCS-M). GCCS-M is the Navy's fielded Command and Control system, a key component of the *Copernicus ... Forward* C4I strategy, and is the Navy's tactical implementation of the Global Command and Control System (GCCS). GCCS-M has aggressively pursued an evolutionary acquisition strategy in rapidly developing and fielding new C4I capabilities for GCCS-M Afloat, GCCS-M Ashore, GCCS-M Tactical/Mobile and OED users. GCCS-M current phase includes continued usage of the Defense Information Infrastructure Common Operating Environment (DII COE), as stipulated by the Joint Technical Architecture, incorporation of Fleet requirements for merging tactical and non-tactical networks, and application of mature Web and Personal Computer (PC) technologies to provide required information/capabilities. This phase will provide, in the short term, deployment of an integrated UNIX/PC/COTS based Naval implementation of GCCS-M

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Exhibit R-2, Budget Item Justification

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EXHIBIT R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N
 PROGRAM ELEMENT TITLE: Tactical Command System

which will provide the warfighter with a cost-effective, user-friendly, comprehensive C4I solution and, in the long-term, a continuous, integrated Command and Control link from sensor to shooter, including full-range real-time or near-real-time information to weapon systems for decision makers. The Naval Simulation System (NSS) provides a capability to simulate the execution of all Naval Warfare including Operations Other Than War to be used for a number of related purposes. Fleet Command Centers use this capability for Course of Action Assessment. NSS supports fleet operations by providing a capability to inject simulated platform, system, or commander level entities into real world Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems, and by providing automated tools for conducting post-exercise analyses. NSS provides a comprehensive ability to simulate and assess Naval and joint CONOPS and system/platform/force level capabilities. NSS explicitly accounts for C4ISR interactions among all Warfare Mission Areas (WMAs)." The Integrated Shipboard Network System (ISNS) program provides every Navy ship, including submarines, with a reliable, high-speed Local Area Network (LAN) that will provide LAN and Wide Area Network (WAN) access to the DISN WAN (Secure and Nonsecure Internet Protocol Router Network -SIPRNet and NIPRNet). It provides real-time information exchange between afloat units, Component Commanders, numbered Fleet Commanders and Fleet CINCs through the migration of existing legacy systems into the IT-21 strategy and is a key factor in the implementation of the Navy's portion of Joint Vision 2010. Additionally, this RDT&E Project funding supports design, development and testing of two components of the Navy Tactical Command Support Systems (NTCSS) web initiative, NTCSS Enterprise Database and Maritime Logistics Data Network (MLDN). The development of a web-enabled enterprise database for NTCSS application will place all NTCSS databases into a similar structure, allowing greater interoperability between applications. MLDN will facilitate the movement of administrative workload from ships to shore.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because they encompass engineering and manufacturing development of new end-items prior to production approval decision.

B. (U) PROGRAM CHANGE SUMMARY:

FY 01: Transfer to SBIR (-\$1,119K); BTR MUOS UHF OFFLOAD DEMO (-\$118K); ATR for NTCSS WEB ENABLE (-\$325K); JMPS Mission Planning (+\$1,755K); Ocean Surveillance Information System (+\$2,000K); Section 8086 .7% Pro-Rata Reduction (-\$420K); Government-Wide Rescission (-\$129K); and Department adjustments (-\$1,862K). FY01 Net Change (-\$218K).

FY02: EKMS Tier 1 (-\$1,000K), Section 8123 Management Reform Initiative (-\$563K) FY02 Net Change (-\$1,563K).

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Exhibit R-2, Budget Item Justification

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EXHIBIT R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

Note: Defense Emergency Response Fund (DERF) (FY02): (\$6,000K) Naval Fires Network (NFN) is a transformational system that provides real time intelligence correlation, sensor control, target generation, mission planning, engagement and battle damage assessment. This capability is enabled by combining, and ultimately integrating, "best of breed" elements of three existing systems into a converged architecture: Joint Service Imagery Processing System-Navy (JSIPS-N), Tactical Exploitation System-Navy (TES-N) and Global Command and Control System-Maritime (GCCS-M) .

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Exhibit R-2, Budget Item Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2001 Budget	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
E2213 Mission Planning	18,173	20,759	24,644	17,244	11,003	17,148	10,102	CONT.	CONT.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Mission Planning System (JMPS) is a co-development program with the Navy, Air Force, USSOCOM, and Army to develop a scaleable, extensible, and configurable open architecture to meet a full range of Joint automated mission planning needs. The JMPS mission planning system will provide the information, automated tools, and decision aids needed to rapidly plan for aircraft, weapon, or sensor missions as well as post-mission analysis of recorded data. JMPS will be a Defense Information Infrastructure/Common Operating Environment (DII/COE) compliant mission planning system, which will meet future DOD requirements for interoperability within and across DOD C4I systems while reducing life-cycle cost. JMPS accomplishes these goals by establishing a standardized environment for mission planning systems (the Joint Mission Planning Environment (JMPE)) that provides a DII COE / Joint Technical Architecture (JTA) compliant Windows 2000 core, a mission planning infrastructure of basic databases, management tools, and framework services, and a set of common mission planning components. A JMPS mission planning system is a combination of the JMPE together with platform/Service unique components and the necessary system hardware to meet user mission planning needs and constraints. The Navy and Air Force will co-develop the common software, while individual platforms programs will develop platform specific functionality, similar to what is being done in both Tactical Automated Mission Planning System (TAMPS) and Air Force Mission Support System (AFMSS) programs. JMPS has adopted an evolutionary acquisition approach, which will allow the warfighter to seamlessly perform basic-level flight planning with the JMPS Version 1 system, unit-level mission/combat planning with the JMPS Combat 1 system, and multi-unit/strike planning and force-level decision aids with the JMPS Follow-On Components system. The JMPS Version 1 system will provide basic flight planning, route planning/editing, file calculations, mapping (NIMA), 3-D visualization, CMDL, and Intel interface. The JMPS Combat 1 system is planned to be an enhanced version of JMPS Version 1 and will replace TAMPS in the Fleet. JMPS Combat 1 will provide unit level planning, GCCS-M interface, GPS Crypto Keys, PGM planning, weather interface, GPS Prediction and Server Implementation. The JMPS Follow-On Components system will be an enhanced version of JMPS Combat 1 to provide additional components and capabilities including a multi unit level mission planning capability, TBMCS Interface, route deconfliction, stores planning and weapon effectiveness, and Littoral Mission Planning Tools.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

(U) JUSTIFICATION FOR BUDGET ACTIVITY

These programs are funded under Engineering & Manufacturing Development because they encompass engineering and manufacturing development of new end-items prior to production approval decision.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$13,805) Continued JMPS Version 1 development effort.
- (U) (\$4,368) Started development of JMPS Post Version 1 (Combat 1) Combat Mission Planning components to support retirement of TAMPS.

2. (U) FY 2002 Plan:

- (U) (\$20,131) Continue JMPS Post Version 1 and Combat 1 development effort.
- (U) (\$628) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638.

3. (U) FY 2003 Plan:

- (U) (\$10,917) - JMPS Version 1 and Combat 1 Development Effort - JMPS Version 1 support during Operational Testing. Nomination and assessment of JMPS Version 1 and Combat 1 contract incentive fees. Continue JMPS Combat 1 fix builds for any discrepancies identified during systems testing. Continue systems testing, start UPC testing, System of Systems testing, and UPC validations. Contract incentive fee.
- (U) (\$700) - Operational Testing Support to the Air Force - Continue JMPS Version 1 support during Operational Testing by the Air Force. JMPS Combat 1 Pre-Operational Test Readiness Review and begin JMPS Combat 1 Operational Testing late in FY03.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

- (U) (\$4,173) - JMPS Follow-On Components Effort - Start JMPS Follow-On development planning effort. Coordinate and plan the development of additional mission planning components and capabilities including a multi-unit level mission planning capability, TBMCS Interface, route de-confliction, stores planning and weapon effectiveness.
-
- (U) (\$800) - PFPS Component Migration to JMPS - Continue component development encompassed functionality, full documentation, User help - online support, component installation, developer and/or user training/CBT, and maintenance.
- (U) (\$8,054) - Engineering, Logistics and Management Support for JMPS Version 1, JMPS Combat One, and JMPS Follow-On Components - Continue integrated product logistics support for JMPS Version 1 and JMPS Combat 1 Beta build releases compatibility. Continue systems engineering support and management support from integrated product teams during the development of JMPS Version 1, JMPS Combat 1 and JMPS Follow-On Components Beta and version releases ensuring contractor accuracy and precision of framework components and enhanced operability components. Continue collaboration between JMPS Combat 1 integrated product team and other services, i.e. the Air Force and the Army during JMPS Combat 1 development and JMPS Follow-On Components development. Provide collaboration support between JMPS Version 1, JMPS Combat 1 and Follow-On Components integrated product team and other platform and weapon programs across the Navy, Air Force, Marine Corps and Army.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) FY 2002 President's Budget Submit:	17,405	20,944	
(U) Adjustments from President's Budget:	+768	-0.185	
(U) FY 2003 OSD Budget Submit:	18,173	20,759	24.644

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2001 net increase of \$.768 million reflects an increase of \$1.755 million for JMPS Mission Planning offset by a decrease of \$.420 million for a reprioritization of requirements within the Navy and a decrease of \$.567 million for a Small Business Innovative Research Assessment. The FY 2002 decrease of \$.185 million reflects an undistributed congressional reduction.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

(U) Schedule: The 1Q/02 JMPS Follow-On Components contract award date has been changed to a 2Q/03 award date, however, JMPS Follow-On Components requirement definition and contract preparation will begin in 1Q/03. JMPS Force Level Planning was renamed to JMPS Follow-On Components but the effort remains the same. JMPS Version IOC has slipped from 2Q/03 to 2Q/04 due to additional Beta Testing required. JMPS Follow-On Components and Responsive Planning IOC has slipped from 2004 and 2005, respectively, to 2006. The 3Q/01 JMPS Post V1 contract award has been renamed as JMPS Combat One (JC-1) but the effort remains the same.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY2007</u>	<u>To</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
BLI 287600 TAC A/C Mission Planning System (OPN)	11,830	13,223	6,597	8,899	10,317	6,705	12,321	CONT.
PE28006F Air Force Mission Support System (total)	20,565	16,904	17,154	17,499	17,862	17,900	18,051	CONT.

Related RDT&E

P.E. 0604215N (Standards Development)	10,353	10,213	2,983	2,929	1,658	1,926	1,949	
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(U) D. ACQUISITION STRATEGY: The JMPS Acquisition strategy will evolve as the program matures but initially will cover the Engineering and Manufacturing Development (EMD) effort. The strategy entails a two-phased evolutionary approach to acquire the initial JMPS development effort. The combined USAF/USN Phase I of this effort obtained various technical studies, segment architect concept, design to cost estimate, and an architecture development statement of work. Phase I was added to the program to determine reduced cost strategies through software reuse from both USN TAMPS and USAF AFMSS programs. Additionally, this phase provided a risk reduction plan for the most effective migration of existing mission planning systems. Phase I was awarded to two contractors. In Phase II, one contractor was selected to develop the JMPS architecture framework and version 1 mission planning components. Post Version I component development will be broken into two phases. Components required to retire TAMPS and meet F-16 planning requirements will be developed under a modification to the existing architecture framework contract. All other combat and force level components will be acquired through a follow-on full and open competition.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: E2213

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: Mission Planning

(U) D. SCHEDULE PROFILE

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Complete</u>
(U) Program Milestones				
NPFPS Version 3.2		1Q/02 release		
NPFPS Version 3.3		2Q/02 release		
NPFPS Version 3.4		4Q/02 release		
JMPS Version 1 (JV1)				2Q/04 IOC
JMPS Combat 1 (JC1)				2Q/04 IOC
JMPS Follow-On Components				IOC 2004
JMPS Responsive Planning				IOC 2005
 (U) Engineering Milestones				
 (U) T&E Milestones		2Q/02 JMPS Version 1 DT Assist		
			4Q/03 JMPS Combat 1 OT	
 (U) Contract Milestones				
	3Q/01 JMPS Combat 1 Contract Award		2Q/03 JMPS Follow on Components Contract Award	

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Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N
 PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: E2213
 PROJECT TITLE: Mission Planning

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>FY 2002 Cost</u>	<u>FY 2002 Award Date</u>	<u>FY 2003 Cost</u>	<u>FY 2003 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Primary Development (JV1)	SS/CPAF	Logicon, CA	16,463	8,677	11/00	4,515	11/01	1,807	11/02		31,462	53,706
Primary Development (JC1)	SS/CPIF	Logicon, CA		3,200	07/01	8,200	11/01	6,700	11/02		18,700	21,150
Primary Development	MP	Eglin AFB, FL	4,665	1,465	11/00	185	11/01	300	11/02		6,615	6,615
Primary Development	MP	Hill AFB, UT		562	11/00	650	11/01	500	11/02		1,712	1,712
Systems Engineering	MP	FEDSIM (GSA)		100	11/00	100	11/01	300	11/02	CONT.	CONT.	
Primary Development (follow on)	TBD	TBD						4,173	11/02			TBD
Award Fees				1,985	11/00	2,410	11/01	2,410	11/02	CONT.	6,805	6,805
Subtotal Product Development			21,128	15,989		16,060		16,190		CONT.	CONT.	
Remarks												

The total cost for the JV1 CPAF contract represents the total portion of the Navy funding provided. The additional funding required to meet the Target Value of the JV1 contract is provided by the Air Force. The JMPS Follow-on development contract will be competitively awarded in FY03. The Air Force development effort will complete in FY03 with the deliverables, Mission Planning S/W tools, provided as GFE/GFI to the development contractor. The development effort is critical to meeting the JMPS IOC in FY03. In accordance with the JMPS Award Fee Plan, Logicon was awarded a rating of "Very Good," equating to 82% of the available Award Fee Pool.

Integrated Logistics Support	WX	SPAWAR, PA	345	271	11/00	500	11/01	1,600		CONT.	CONT.	
Integrated Logistics Support	WX	NAWCAD, MD	179	100	11/00	400	11/01	900		CONT.	CONT.	
Subtotal Support			524	371		900		2,500		CONT.	CONT.	
Remarks												

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Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N
 PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: E2213
 PROJECT TITLE: Mission Planning

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>FY 2002 Cost</u>	<u>FY 2002 Award Date</u>	<u>FY 2003 Cost</u>	<u>FY 2003 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Operational Test & Evaluation	WX	OPTEVFOR, VA	400	0		500	11/01	700	11/02	CONT.	CONT.	
Subtotal Test & Evaluation			400	0		500		700		CONT.	CONT.	
Remarks												
Govt. Engineering Support	WX	NAWCAD, MD	566	50	11/00	330	11/01	985	11/02	CONT.	CONT.	
Program Mgmt Support	RX	Various	338	50	11/00	354	11/01	610	11/02	CONT.	CONT.	
Travel	WX	NAWCAD, MD	225	125	11/00	200	11/01	200	11/02	CONT.	CONT.	
Govt. Engineering Support	WX	NAWCAD, CA		1,588	11/00	1,787	11/01	3,459	11/02	CONT.		
SBIR Assessment						628						
Subtotal Management			1,129	1,813		3,299		5,254		CONT.	CONT.	
Remarks												
Total Cost			23,181	18,173		20,759		24,644		CONT.	CONT.	

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X0486
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Tac/Mobile

(U) COST: (Dollars in Thousands)

PROJECT NUMBER	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
GCCS-M Tactical/Mobile (GCCS-M Tac/Mobile) X0486	1,428	1,613	1,470	1,720	1,503	1,535	1,534	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Global Command and Control System-Maritime (GCCS-M) Tactical/Mobile program provides evolutionary systems and equipment upgrades to support Maritime Sector Commanders with the capability to plan, direct and Control the tactical operations of Joint and Naval Expeditionary Forces and other assigned units within their respective area of responsibility. These operations include littoral, open ocean, and over land all-sensor surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, and special operations.

The missions are supported by the Tactical Support Centers (TSCs) and the Mobile Operations Control Centers (MOCCs). Services provided include analysis and correlation of diverse sensor information; data management support; command decision aids; rapid data communication; mission planning and evaluation and dissemination of surveillance data and threat alerts to operational users ashore and afloat. All Tactical/Mobile systems are based on the GCCS-M architecture, which is Defense Information Infrastructure (DII) Common Operating Environment (COE) compliant.

TSCs provide C4I capability, air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MOCC is a scalable and mobile version of the TSC for operations from airfields that do not have TSC support. This program assures that existing TSCs and MOCCs are modernized to fulfill their operational requirements. TSC/MOCC will continue to support P-3C/S-3B aircraft updates to sensors and weapons systems, such as the Anti-Surface Warfare Improvement Program (AIP), as well as develop emergent, ground support capabilities for the Multi-Mission Aircraft (MMA).

GCCS-M Tac/Mobile R&D efforts are developed in agreement with and in mutual support of OPNAV N62 and N78. These efforts are required to provide support for the N78 platforms as related to the non-C2 aspects of the program.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$524) Rehosted additional functions to Windows NT under (DII COE). Improved Aircraft Status segment operability by focusing on ease of use and data sharing from pre-mission planning to post mission wrap up. Developed new functionality for Generic Mission Replay (GMR) to support mission replay of new aircraft capabilities, including CFS, IEER, and 78A/B. Developed new functionality for Tactical Data Insertion (TDI) operational usability. Incorporated new P-3 aircraft capabilities including Global Null Steer and Command Function Select (CFS). Redesignated Human Machine Interface (HMI) of Aircrew Brief segment to improve operator usability by automating data entry and auto-populating other applications.
- (U) (\$215) Developed expanded Aircraft Interfaces to improve processing for new aircraft sensors, including the APS-137 Synthetic Aperture Radar (SAR) and high resolution Inverse Synthetic Aperture Radar (ISAR) modes, as well as the Advanced Imaging Multi-spectral System (AIMS).
- (U) (\$110) Developed interface for new aircraft data transport devices. Improved Aircraft Tape Operating System (ATOS) user interface and incorporate new P-3 aircraft data transport devices, including Replacement Data Storage Systems (RDSS), Command Function Select (CFS), Improved Extended Echo Ranging (IEER), S-3B 4.4.2 & 4.5a, and Canadian CP-140 aircraft.
- (U) (\$181) Continued software development of improved acoustic Fast Time Analysis System (FTAS) into TSC and MOCC GCCS-M systems to enhance interoperability and commonality. Developed requirements set for new function to support new aircraft IEER capability.
- (U) (\$139) Developed software for Electronic Support Measures (ESM) Workstation Interfaces for new aircraft Specific Emitter Identification functions.
- (U) (\$259) Performed End-to-End Testing designed to simulate real world operational usage of the system to ensure that the system functions as an integrated product. Included system compliance, system integration testing, segment compliance, aircraft interface, tactical feeds and requirements checking.

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Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

2. (U) FY 2002 PLAN:

- (U) (\$641) Develop new capabilities to support emerging aircraft weapons and non-acoustic sensors on P-3C ASUW Improvement Program (AIP), P-3C Baseline Modification Upgrade Program (BMUP), and other derivative aircraft. Analyze Multi-mission Maritime Aircraft (MMA) aircraft impact on TSC and MOCC systems. Continue to develop interfaces for emerging aircraft data transport devices. Perform testing on new software and hardware components. Continue development of aircraft status to web-enable segment and combine with Aircraft Brief.
- (U) (\$178) Analyze TSC/MOCC requirements for advanced data links such as LINK-16, Common Data Link (CDL) and other high bandwidth data transmission paths. Migrate two-way LINK-11 to new platform.
- (U) (\$394) Continue improvements to acoustic Fast Time Analysis System (FTAS) to reduce reliability on obsolete proprietary hardware, incorporate Commercial Off The Shelf (COTS) technology, and incorporate new functionality in support of emerging aircraft acoustic capabilities. Analyze and develop detailed set of requirements for follow-on system.
- (U) (\$177) Complete the rehosting of all functions to Windows NT including development of new hardware drivers and updates to stay current with the DII COE kernel and Navy initiative for web enablement.
- (U) (\$223) Develop interfaces and incorporate joint and coalition SATCOM and line of site radios, cryptographic units and antenna technology. Ensure interoperability in a land, sea, air, and mobile environment. Investigate and initiate development of a Digital Modular Radio (DMR) interface between other TSC/MOCC elements.

3. (U) FY 2003 PLAN:

- (U) (\$331) Design new interfaces between UHF SATCOM Digital Modular Radio (DMR) (as replacement for obsolete VICS radio) and legacy system. Continue development activities necessary to stay current with joint and coalition SATCOM and line of site radios, cryptographic units and antenna technology. Ensure interoperability in a land, sea, air and mobile environment.

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UNCLASSIFIED

Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

- (U) (\$390) Develop new capabilities to support emerging aircraft weapons and non-acoustic sensors on Maritime Patrol Aircraft (MPA). Develop necessary interfaces to support precision strike targeting to include advanced data links.
- (U) (\$278) Develop new ground workstation software for new and upgraded aircraft sensors. Continue to develop interfaces for emerging aircraft data transport devices. Perform testing on new software and hardware components.
- (U) (\$471) Complete development of requirements set which will support and investigate potential software and hardware prototype for follow-on Fast Time Analysis System (FTAS) that meets the new functionality required to support new aircraft capabilities and digital buoy technology.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

<u>Appn</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	COST TO	TOTAL
	ACTUAL	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	COMPLETE	PROGRAM
OMN (N62)	6,661	8,221	7,796	8,076	8,149	8,294	8,554	CONT.	CONT.
OMN (N78)	3,114	3,283	6,901	3,492	3,587	3,707	3,807	CONT.	CONT.

(U) RELATED RDT&E:

- PE 0604231N: (GCCS-M Maritime Apps X0709): GCCS-M Maritime Apps provides portions of GCCS-M functionality common among Afloat, Ashore, and Tactical/Mobile environments.
- PE 0604231N: (GCCS-M Common Apps X2305): GCCS-M Common Apps provides portions of the Defense Information Infrastructure Common Operating Environment (DII COE) functionality required by Afloat, Ashore, and Tactical/Mobile GCCS-M environments.
- PE 0604261N: (Acoustic Search Sensors): TSC maintains interoperability with S-3 weapon systems and future improvements.
- PE 0604221N: (P-3 Modernization): TSC maintains interoperability with, and fully supports P-3 system changes and enhancements.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

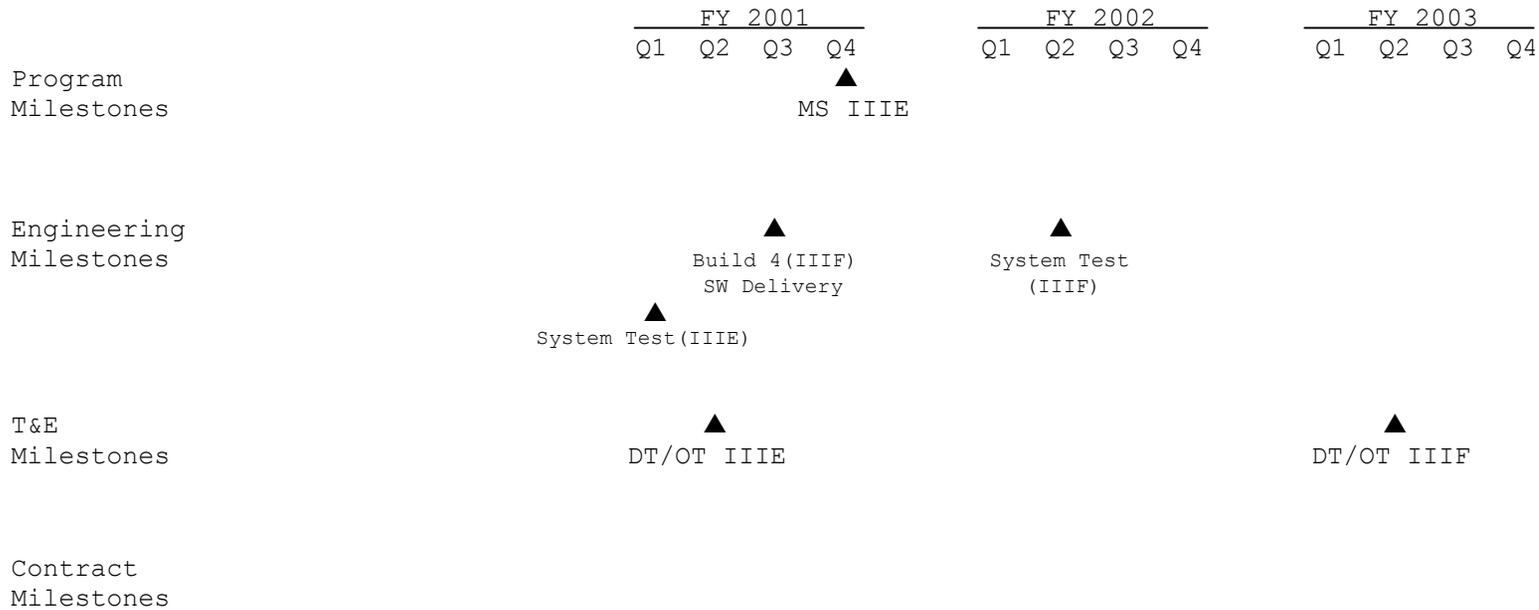
PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:



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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	31,073	1,085	Var.	1,144	Var.	877	Var.	CONT.	CONT.	
Subtotal Product Development	Various	Various	31,073	1,085	Var.	1,144	Var.	877	Var.	CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	18,469	129	Var.	137	Var.	221	Var.	CONT.	CONT.	
Subtotal Sys Eng Support	Various	Various	18,469	129	Var.	137	Var.	221	Var.	CONT.	CONT.	
Remarks:												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	Various	Various	3,019	0	Var.	68	Var.	70	Var.	CONT.	CONT.	
Subtotal T&E	Various	Various	3,019	0	Var.	68	Var.	70	Var.	CONT.	CONT.	
Remarks												
Project Management	Various	Various	9,713	214	Var.	264	Var.	302	Var.	CONT.	CONT.	
Subtotal Management	Various	Various	9,713	214	Var.	264	Var.	302	Var.	CONT.	CONT.	
Remarks												
Total Cost	Various	Various	62,274	1,428	Var.	1,613	Var.	1,470	Var.	CONT.	CONT.	

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X0709 GCCS-M Maritime Apps	6,263	7,194	5,956	9,750	7,462	9,628	8,779	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The GCCS-M system is the component of GCCS used in the afloat, ashore and tactical/mobile maritime environments. GCCS-M meets the requirements of the tactical commander for a near real-time, fused common tactical picture with integrated intelligence services and databases. GCCS-M supports the Command, Control, Communication, Computers and Intelligence (C4I) mission requirements of the Chief of Naval Operations (CNO), Fleet Commanders in Chief (CINC), Numbered Fleet Commanders (NFC), Officer in Tactical Command/Composite Warfare Commander (OTC/CWC), Type Commanders (TYCOM), Commander Submarine Operations Authority (COMSUBOPAUTH), Commander Task Force (CTF), Commander Amphibious Task Force (CATF), Commander Landing Force (CLF), Ship's Commanding Officer/Tactical Action Officer (CO/TAO), and Joint Task Force (JTF) Commanders, as well as other functional commanders such as the Command and Control Warfare Commander (C2WC). It also integrates both joint and service-unique Command and Control projects in order to support joint task force and Navy afloat requirements. Efforts include design, integration, and test of Tactical Decision Aids (TDAs), Navy Status of Forces (NSOF), and integration of GCCS-M baselines with weapons systems and Combat Direction Systems. These efforts will provide the battle group/force commanders with the information needed to enhance their warfighting capabilities. GCCS-M is also continuing a transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology. GCCS-M is a key system currently being used to support real world operations afloat, ashore, and with tactical/mobile commanders.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,376) Aircraft Mission Planning / TACMOBILE: Developed new functionality and enhanced existing functionality to meet the high priority requirements specified by the Fleet CINCs and validated by CNO at the CRWG, including development of P-3 aircraft interfaces and TBMCS interoperability.
- (U) (\$128) Testing: Supported operational test planning and execution to prepare for OPEVAL and MS IIIIE.
- (U) (\$712) Architecture: Provided thin-client front end to the existing scheduling and readiness tools to enable disadvantaged users at Immediate Superior in Command (ISICs) and Type Commanders (TYCOMs) to exploit the same scenario-based calculation capabilities contained at fleet command centers. Users are able to perform remote updates via internet web technology and database replication features, eliminating the requirement for message based data transfer.
- (U) (\$475) Readiness: Developed a web interface to the joint Global Status of Resources and Training (GSORTS) database so that all maritime users can provide inputs to the national status of forces data, as well as the lower echelon readiness systems in either a fleet command center with GCCS software or at Navy specific site fielding GCCS-M.
- (U) (\$430) Aircraft Mission Planning / TACMOBILE: Ported all remaining UNIX-based TSC applications to a PC environment, using extensions designed for commercial desktop applications to interface with GCCS-M tactical data sources. Provided components for pre-flight sensor analysis that can be imbedded into other desktop utilities for scheduling and post-mission replay. Utilities were interfaced with the DII COE on NT for mission display, and were incorporated into the FLTCAST effort for web-based subscription capabilities.
- (U) (\$190) Threat OOB and C&P: Migrated TSC applications to the current version of the Modernized Intelligence Database (MIDB). Migration to the Defense Intelligence Agency (DIA) database enabled TSCs to integrate with the Joint community for ATO generation, order of battle maintenance and targeting support.

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$437) Useability: Provided Integrated Products (IP) that support both legacy AUTODIN or text-based data transfer, as well as moved modern IP-based data transmission messages for data transfer and automated message handling. Leveraged DMS effort into a Maritime implementation for organizational email and data transfer for population of tactical databases.
- (U) (\$932) Testing: Continued acceptance, development, and operational test phases in labs and operational sites. Acceptance and development testing included joint certifications, compliancy with the DII COE and security policies, and functional testing for each segment. Funding was also be used to support the ongoing Test IPTs and TPWG processes.
- (U) (\$266) Useability: Continued integration of GCCS (Joint) software in shore and shipboard environments, including incorporation of Navy-specific applications into the Joint software and network environment. Ensured that all applications were also built to the common segmentation guideline, so that they can also be loaded on the same physical machine.
- (U) (\$433) Combat Systems Interface: Continued interface development between GCCS-M and Aegis/non-Aegis combat systems. Initiated a DII COE Level 7 integration between ATWCS, TTWCS, AADC, and GCCS-M to enable combat systems to be installed on a common platform.
- (U) (\$694) Architecture: Designed a hybrid UNIX and PC server architecture to consolidate multiple low-end servers into a high availability enterprise server to increase reliability, maintainability and availability and to lower maintenance costs. Refined on the three-tier architecture to enable smaller-scale database and application servers to be swapped into architecture without disturbing client application code.
- (U) (\$190) Employment Scheduling / WSM: Continued enhancements to Water Space Management (WSM), identified through CRWG requirements processes.

2. (U) FY 2002 PLAN:

Per the attached schedule, FY02 is a critical year leading up to DT/OT of GCCS-M Increment IIIF. Failure to complete capability planned for Increment IIIF will result in a breach of negotiated interfaces with several other programs, including P-3 aircraft upgrades and Virginia class submarines.

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UNCLASSIFIED

Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$1,130) Aircraft Mission Planning / TACMOBILE: Provide C4I research and product improvement for P-3 mission and other avionics platforms. Provide enhanced capability in support of P-3 aircraft P3I and follow-on initiatives, including interface changes. Provide developmental support to P-3 Tactical Support Center operations by satisfying emerging technology requirements initiated by Fleet operators, developing interfaces to aircraft systems, and increasing the interoperability between P-3 support applications, including Aircraft Status, Aircrew Brief, Generic Message Replay & Reconstruction, Pre/Post-Flight ESM, P-3 Tactical Data Insertion, and Inverse Synthetic Aperture Radar (ISAR) video analysis. Provide access to applications through web-based interfaces. Provide interfaces to other aircraft mission planning systems, such as TAMPS or JMPS.
- (U) (\$576) Architecture: Develop and implement modernized architectures, including web-centric and N-Tier. Continue to develop Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corps elements. Test and integrate GCCS-M GOTS products into PC COTS installation and runtime environment. Perform testing and integration with latest commercial products to ensure complete interoperability and data level integration. Perform engineering to provide fleet recommendations on compatible hardware and software configurations/modifications to current baselines.
- (U) (\$2,205) Employment Scheduling / WSM: Develop and update employment scheduling capabilities in support of Fleet requirements. Develop employment scheduling capability on DII/COE compliant PC platforms. Integrate WebSked (formerly known as VIPER) with latest versions of COTS/MS Office products. Incorporate emerging requirements validated and prioritized by WebSked operational community, which may include fuel management, notional templates, multiple proposals and deployment transit planning. Provide capability for employment scheduling data to be linked to readiness, logistics, intelligence, and track databases in such a way that operators can obtain a comprehensive understanding of all relevant data to be used in planning and command & control scenarios. Incorporate WSM requirements identified by CRWG process.
- (U) (\$1,821) Readiness: Research Fleet requirements for viewing and archiving readiness data. Link readiness data with track, intelligence, and imagery data to provide a comprehensive understanding of a unit's operational status. Continue to integrate GCCS (Joint) segments into GCCS-M. Provide web-based, graphical entry of Readiness data, and develop web-based solutions for viewing archived readiness data in Fleet-specified formats. Incorporate emerging requirements identified and prioritized during CRWG requirements process.

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U)(\$595) Spectral and Environmental Analysis: Develop capability for automatic interface and update with SPEDS/ICAP Integrated Product (SIIP) and Meteorological and Oceanography (METOC). Continued development of Tactical Decision Aids (TDAs) and COTS tactical analysis tools for incorporation into General Service (GENSER) and Sensitive Compartmented Information (SCI) Software for analyst workstations, Electronic Warfare Command Stations (EWCS), and supporting the Command and Control Warfare Center (C2WC). Incorporate new functional capability prioritized by Fleet users, including web-based applications as appropriate.
 - (U)(\$867) Testing: Continue to perform systems testing on the integrated components of the Naval C4I architecture. Modernize test facilities to maintain capability to test newly developed software and architectures, including web-based products. Support the proof of concept testing in exercise environments of emerging technology in the C4I arena.
3. (U) FY 2003 PLAN:
- (U)(\$1,284) Aircraft Mission Planning / TACMOBILE: Continue to develop interfaces to aircraft systems, and increase the interoperability between P-3 support applications, including Aircraft Status, Aircrew Brief, Generic Message Replay & Reconstruction, Pre/Post-Flight ESM, P-3 Tactical Data Insertion, and Inverse Synthetic Aperture Radar (ISAR) video analysis. Continue to provide web-based applications. Continue to develop interfaces to support evolving aircraft mission planning systems, including TAMPS and JMPS. Continue to migrate functionality to maintain currency with DII COE and maximize use of COE-provided capabilities. Continue to integrate TBMCS with GCCS-M.
 - (U)(\$2,108) Employment Scheduling / WSM: Continue to develop and integrate web-enabled employment scheduling capabilities in support of Fleet requirements. Continue to integrate WebSked (formerly known as VIPER) with latest versions of COTS/MS Office products. Continue to incorporate emerging requirements validated and prioritized by WebSked operational community. Continue to develop and integrate linkages between employment scheduling data and readiness, logistics, intelligence, and track data in such a way that operators can obtain a comprehensive understanding of all relevant data to be used in planning and command & control scenarios. Incorporate WSM requirements identified by CRWG process. Continue to migrate functionality to maintain currency with DII COE and maximize use of COE-provided capabilities.

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U)(\$699) Readiness: Continue to develop and integrate Fleet requirements for viewing and archiving readiness data. Continue to develop and integrate linkages between readiness data and track, intelligence, and imagery data to provide a comprehensive understanding of a unit's operational status. Continue to integrate current versions of GCCS (Joint) segments into GCCS-M. Continue to provide web-based, graphical entry of readiness data, and enhance web-based solutions for viewing archived readiness data in Fleet-specified formats. Continue to develop and integrate capabilities to archive historical readiness data using the Consolidated History File (CHF) application. Continue to incorporate emerging requirements identified and prioritized during CRWG requirements process. Continue to maximize usage of COE-provided capabilities.
- (U)(\$746) JPN / TADILS / BROADCASTS: Develop and integrate capabilities to distribute and associate readiness, employment scheduling, and nodal analysis data with track data using mechanisms provided by the DII COE and the Maritime extensions.
- (U)(\$420) Spectral and Environmental Analysis: Continue to develop capability for automatic interface and update with SIIP and METOC as these products evolve. Continue development and integration of Tactical Decision Aids (TDAs) and review COTS tactical analysis tools for incorporation into GENSER and SCI Software for analyst workstations, Electronic Warfare Command Stations (EWCS), and supporting the Command and Control Warfare Center (C2WC). Continue to enhance existing and incorporate new functional capability prioritized by Fleet users. Continue to migrate functionality to maintain currency with DII COE and maximize use of COE-provided capabilities.
- (U)(\$699) Testing: Continue to perform systems testing on the integrated components of the Naval C4I architecture. Continue to modernize test facilities to maintain currency with emerging technological standards to support testing newly developed software and architectures. Continue to support the proof of concept testing in exercise environments of emerging technology in the C4I arena. Continue to conduct reviews of existing and additional system functionality to prevent duplication and maximize DII COE compliancy.

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

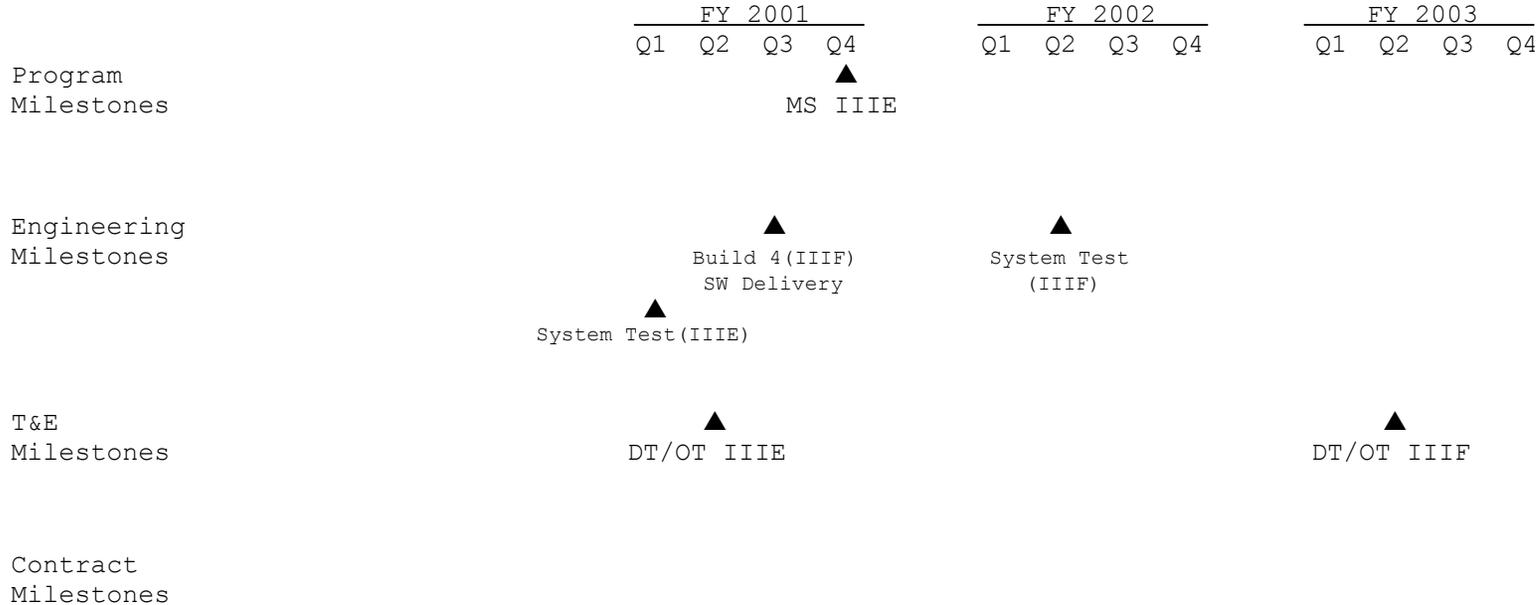
PROJECT TITLE: GCCS-M Maritime Apps

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) GCCS-M Intelligence Applications.

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:



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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	29,700	4,911	Var.	2,518	Var.	1,914	11/02	CONT.	CONT.	
Software/Product Development	WX	SSC San Diego				2,478	10/01	1,959	11/02	CONT.	CONT.	
Software/Product Development	WX	SSC Charleston				991	10/01	1,126	11/02	CONT.	CONT.	
Subtotal Product Development	Various	Various	29,700	4,911	Var.	5,987	Var.	4,999	11/02	CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	10,070	877	Var.	711	Var.	466	11/02	CONT.	CONT.	
Subtotal Support	Various	Various	10,070	877	Var.	711	Var.	466	11/02	CONT.	CONT.	
Remarks												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01Cost	FY01 Award Date	FY02Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	1,090	0		0		0		CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	1,090	0		0		0		CONT.	CONT.	
Remarks												
Program Management	Various	Various	7,288	475	Var.	496	Var.	491	11/02	CONT.	CONT.	
Subtotal Management	Various	Various	7,288	475	Var.	496	Var.	491	11/02	CONT.	CONT.	
Remarks												
Total Cost	Various	Various	48,148	6,263	Var.	7,194	Var.	5,956	11/02	CONT.	CONT.	

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X2009 Trusted Information Systems (TIS)	5,581	3,904	2,973	3,039	3,068	4,095	3,625	CONT.	CONT.

A. (U) Trusted Information Systems (TIS) is a combination of the Ocean Surveillance Information System (OSIS) Evolutionary Development (OED) system and the Radiant Mercury (RM) system incorporating multi-level security (MLS) web technologies. TIS provides the core on-line, automated, near-real time, multi-level secure, information analysis, dissemination, and receipt capabilities that enable Unified Commanders-in-Chief and Joint Task Force Commanders afloat and ashore to disseminate and receive critical operational and intelligence information with own forces and Coalition/Allied forces via tactical and record communications circuits. OED is a designated migration system providing for the analysis of intelligence information from multiple sources to produce a comprehensive report of foreign forces and potential hostile activity. The system is required to be able to generate multiple, automated near-real-time event-by-event (NRT EBE) data streams at various classification/releasability levels, tailorable to unique customer requirements and capable of being transmitted over multiple communications paths (including DSNET) simultaneously. In addition, it is required to provide near-real-time (NRT) all-source fusion, correlation and analysis tools (including robust graphics presentation and geospatial analysis capabilities), directly feeding automated reporting capabilities. OED provides positional data and operational intelligence to commanders at all levels. The data derived from this process is disseminated as an Operation Intelligence (OPINTEL) product to the operating forces for tactical threat warnings, decision making support, and support of Over-the-Horizon-Targeting. Radiant Mercury is a tool for the automated sanitizing, downgrading, and transliteration of formatted message traffic. A linchpin of network-centric warfare aboard afloat platforms, Radiant Mercury helps ensure critical Indications and Warning intelligence is provided quickly to operational decision-makers. This capability to move all-source intelligence-derived track information into the realm of the operational community significantly improves the situational awareness of tactical operators and planners. Additionally, it assists in providing operational information to intelligence and cryptologic analysts.

(U) TIS builds upon the foundation set by JMCIS OED project which uses the Joint Logistics Commander's Guidance of March 1987 on Evolutionary Acquisition (EA) as the strategy for future software development which includes a plan for incremental achievement of desired capability building on the core system provided by OBU Phases I and II. TIS is built on the foundation of JMCIS OED Phase III EA strategy, which provides a mechanism for adding future capabilities including the incorporation of proven fleet initiated prototypes.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2009
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Trusted Information Systems

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$279) Continued to implement, accredit and deploy MLS changes needed to support email-based and DMS record message traffic.
- (U) (\$497) Implemented, accredited and deployed MLS changes needed to support MLS email and Network Guard technology.
- (U) (\$436) Updated message encoders, decoders and correlation algorithms as required to meet formatted MSG standards and changes in sensor data feeds.
- (U) (\$721) Continued to automate real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
- (U) (\$523) Began porting MLS Capability to DII COE based standards.
- (U) (\$311) Developed system interface capabilities as required for current releases for record communications systems with in an creditable MLS baseline.
- (U) (\$457) Began developing untrusted client architecture using single level clients to evolve into a Multi-Level Security design.
- (U) (\$334) Developed and implemented improved tactical decision aids, and system alerting capabilities.
- (U) (\$2,023) Continued to develop the Concept, Technical Feasibility and Prototype for the Integration of the Contiguous Connection Model (CCM) Information Analysis, Storage and Retrieval System into the TIS MLS System. Continued to perform the Integration, Provide Test and Certification of the enhanced TIS MLS Knowledge Capable (TIS MLS/KD) System.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

2. (U) FY 2002 PLAN:

- (U) (\$1,000) Continue to implement, accredit and deploy MLS changes needed to support MLS email and Network Guard technology.
- (U) (\$367) Continue to update message encoders, decoders and correlation algorithms as required to meet formatted message standards and changes in sensor data feeds.
- (U) (\$639) Continue to automate real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
- (U) (\$496) Continue to port MLS Capability to DII COE based standards.
- (U) (\$310) Continue to develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.
- (U) (\$545) Continue to develop and implement improved tactical decision aids, and system alerting capabilities.
- (U) (\$547) Continue to develop untrusted client architecture using single level clients to evolve a Multi-Level Security design.

3. (U) FY 2003 PLAN:

- (U) (\$526) Continue to implement, accredit and deploy MLS changes needed to support MLS email and network connectivity to the existing MLS architecture.
- (U) (\$221) Continue to update message encoders, decoders and correlation algorithms as required to meet formatted MSG standards and changes in sensor data feeds.

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

- (U) (\$816) Continue to improve tactical decision aids and to automate real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
- (U) (\$517) Continue to port MLS Capability to DII COE based standards.
- (U) (\$296) Continue to develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.
- (U) (\$597) Continue to develop untrusted client architecture using single level clients to evolve a Multi-Security Level design in conjunction with Network Guard and MLS email development.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OMN 1c1c	1,026	1,263	5,066	4,967	5,269	5,483	5,795	CONT.	CONT.

(U) RELATED RDT&E: Not applicable.

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				<u>To Complete</u>
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Program Milestones													
Engineering Milestones													
T&E Milestones						▲ DT							▲ OT
Contract Milestones													

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Exhibit R-2a, Project Justification

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Radius	NAVSUP	32,354	4,771	Var.	3,206	Var.	2,418	Var.	CONT.	CONT.	
Software/Product Development	Various	Various	4,501	313	Var.	228		240	Var.	CONT.	CONT.	
Subtotal Product Development	Various	Various	36,855	5,084	Var.	3,434	Var.	2,658	Var.	CONT.	CONT.	
Remarks:												
System Engineering	WX	Various	8,268	422	Var.	396	Var.	259	Var.	CONT.	CONT.	
Subtotal Support	Various	Various	8,268	422	Var.	396	Var.	259	Var.	CONT.	CONT.	
Remarks:												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	630	0	Var.	0		0		CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	630	0	Var.	0		0		CONT.	CONT.	
Remarks												
Project Management	Various	Various	1,935	75	Var.	74	Var.	56	Var.	CONT.	CONT.	
Subtotal Management	Various	Various	1,935	75	Var.	74	Var.	56	Var.	CONT.	CONT.	
Remarks												
Total Cost	Various	Various	47,688	5,581	Var.	3,904	Var.	2,973		CONT.	CONT.	

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X0521 GCCS-M Intelligence Apps	6,495	6,538	3,610	3,404	3,661	4,018	4,095	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: GCCS-M Intelligence Applications are an integrated set of Defense Information Infrastructure Common Operating Environment (DII COE) compliant segments designed to support tactical intelligence processing and reside on the Intelligence Shared Data Server (ISDS). The ISDS is the central database server for GCCS-M Afloat, the Command and Control Warfare Commander (C2WC) and tactical mission planning systems. Development of GCCS-M Intelligence applications for this data distribution includes dynamic updates of Naval Intelligence Database (NID) and military integration with digital map and imagery systems. The current GCCS-M Intel Apps effort includes providing intelligence data distribution to multiple shipboard warfighters via an analog video distribution system. Furthermore, the GCCS-M Intel Apps effort will enable the GCCS-M Afloat architecture to meet downgrading and releasability requirements. GCCS-M imagery applications provide for archiving, viewing and mensuration of still and video images. This effort is also continuing the transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology. The GCCS-M Intel Apps effort is part of the Tactical Intelligence and Related Activities (TIARA) program, managed by the Secretary of Defense through the Assistant Secretary of Defense for C4I.

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$490) JPN / TADILS / Broadcasts: Continued integration of Radiant Mercury (RM) capability into GCCS-M to meet the high priority Fleet requirement of C4 data downgrading and releasability for coalition interoperability. RM is a certified, accreditable, automated method to downgrade highly sensitive data over security levels.
- (U) (\$640) Threat OOB / C&P: Continued evolving Navy-USMC Team unique intelligence and intelligence-related database support for GCCS-M and MAGTFC4I/Expeditionary Warfare applications as required outside MIDB capability.
- (U) (\$1,000) Imagery / Video Processing: Continued developing, integrating and testing advanced digital imagery server and Navy-Marine Team unique client applications to keep pace with evolving NIMA, DARO and NRO imagery architectures.
- (U) (\$1,130) Threat OOB / C&P: Continued developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based ISDS (GENSER and SCI) and associated intelligence applications in accordance with GCCS-M Intel Apps and GCCS-I3 evolutionary directions and in conjunction with Cryptologic/C2W and other Warfare Commander developments.
- (U) (\$500) Threat OOB / C&P: Completed development of the Modernized Integrated Database (MIDB) replication in GCCS-M to satisfy validated Fleet requirements to generate and maintain a consistent intelligence picture among general purpose C2 systems, mission planning systems, and combat direction systems while reducing numbers of databases to be maintained.
- (U) (\$325) Useability: Continued migration development of Intelligence and Imagery segments to meet fleet IT21 requirements (PC/NT) and DII COE.
- (U) (\$654) Useability: Continued development of fleet validated GCCS-I3 Configuration Control Board (CCB), Intelligence Functional Working Group (IFWG) and Copernicus Requirements Working Group (CRWG) requirements. Developed an automated mechanism to register and catalog software submissions for all GCCS-I3 development, integration and test software builds.

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

- (U) (\$500) Imagery / Video Processing: Continued development of the Navy portion for imagery access and manipulation components of the Joint Targeting Toolbox, a uniform set of targeting applications validated by all Services.
- (U) (\$600) Threat OOB / C&P: Continued development and test enhancements to unit level GCCS-M Afloat intelligence capabilities including access to imagery, associated support data and Electronic Intelligence (ELINT) correlation factors.
- (U) (\$200) Testing: Continued testing of OBU/OED intelligence capability with GCCS-M development; provide OED-unique intelligence tools afloat.
- (U) (\$206) Imagery / Video Processing: Continued to develop and test GCCS-M Intel database applications (MIDB interfaces) with Joint Targeting Toolbox.
- (U) (\$250) Testing: Developed and tested the GCCS-M integration of Common Operating Picture (COP) and MIDB.

2. (U) FY 2002 PLAN:

Per the attached schedule, FY02 is a critical year leading up to DT/OT of GCCS-M Increment IIIF. Failure to complete capability planned in the Intel project for Increment IIIF will result in a breach of negotiated interfaces with several other programs, including Area Air Defense Commander (AADC), AEGIS Combat System, Mine Warfare and Environmental Decision Aids Library (MEDAL) and Joint Service Imagery Processing System-Navy (JSIPS-N).

- (U) (\$183) Tactical Combat and Weapons Systems Support: Provide increased functionality and expand the performance envelope in the Intelligence and Imagery applications to support realtime combat systems interfaces and multiple weapons systems planning and execution.
- (U) (\$1,105) Imagery / Video Processing: Continue migration of the imagery applications that support the Integrated Imagery and Intelligence (I3) product line to the NT platform. Meet fleet requirements for integrating order of battle maintenance, imagery analysis, and intelligence support to the Common Operational Picture into commercial COTS environments to facilitate easy integration with IT-21 platforms and products. Integrate capability into GCCS-M to support UAV data visualization and analysis. Continue to research and integrate Geospatial Information Services (GI&S) into GCCS-M, ensuring compatibility with NIMA developed systems

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

with links to the applicable Imagery and Geospatial libraries. Develop interfaces to other imagery archives. Incorporate emerging requirements validated by Fleet operators through the CRWG requirements process.

- (U) (\$2,572) Threat OOB and C&P: Meet fleet requirements identified and prioritized at the CRWG for integrating order of battle maintenance, and intelligence support to the Common Operational Picture into commercial COTS environments to facilitate easy integration with IT-21 platforms and products. Provide Intel application research and support for IT-21 workstations. Provide data fills for the Intel database. Implement and enhance a fully functional MIDB interface mechanism that enables GCCS-M intelligence applications, combat systems, and mission planning systems to access data within MIDB without having to change their software architecture with each MIDB release from the Defense Intelligence Agency (DIA). Provide increased functionality in the Intelligence and Imagery applications to support capabilities in the DII COE, including real-time, updates to mapping, communication, and track management tools. Integrate Intel data into the SCI enclave.
- (U) (\$278) Spectral and Environmental Analysis: Develop and enhance Intel data sources for C2WC, nodal analysis, and other GCCS-M applications.
- (U) (\$611) JPN / TADIL / BROADCASTS: Enhance capability to attach tactically relevant intelligence data to near real-time tracks that are distributed via the Common Operational Picture pre requirements generated through the CRWG process. Enhance Intelligence and Imagery subscription methodologies to support disadvantaged users. Incorporate COTS Internet tools to enable users to use IT-21 infrastructure to obtain a subset of finished intelligence data and services via the web. Provide the capability to distribute intelligence data cross-referenced to imagery that will enable users to view and edit OOB data, characteristics and performance data, and imagery over the WAN and distribute those changes through the COP to joint intelligence centers. Integrate the Special Intelligence (SI) correlation functions into the core of DII COE, enabling closer integration with the other correlation functions that currently exist in the Joint baseline.
- (U) (\$768) Targeting / Land Track: Continue integration of the Joint Targeting Toolbox products into GCCS-M, providing seamless capability to edit and view the targeting tables in combination with the Order of Battle (OOB) maintenance function performed in GCCS-M and provide a single set of interfaces within JTT for creation of target lists, selection of imagery, creation of task collection, plans, etc. Integrate SCI SIGINT support to GENSER Command and Control capabilities in support of time critical targeting.
- (U) (\$1,021) Testing and Documentation/Curriculum Development: Perform systems testing on the integrated components of the GCCS-M Intel architecture. Develop a capability for generating GENSER and SCI national and

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

tactical data for GCCS-M testing, training and exercise support. Develop a documentation infrastructure that enables required segment documentation to be utilized throughout GCCS-M (segment and system-level) in user's manuals, delivery documentation, and curriculum development.

3. (U) FY 2003 PLAN:

- (U) (\$1,005) Imagery / Video Processing: Continue development and integration of imagery applications that support the Integrated Imagery and Intelligence (I3) product line to the NT platform. Continue to develop software to implement fleet requirements for integrating order of battle maintenance, imagery analysis, and intelligence support to the Common Operational Picture into commercial COTS environments to facilitate easy integration with IT-21 platforms and products. Continue to integrate capability into GCCS-M to support Unmanned Aerial Vehicle (UAV) data visualization and analysis. Research and integrate Geospatial Information Services (GI&S) into GCCS-M, ensuring compatibility with NIMA developed systems with links to the applicable Imagery and Geospatial libraries. Continue to develop interfaces to other imagery archives. Continue to incorporate emerging requirements validated by Fleet operators through the CRWG requirements process.
- (U) (\$2,227) Threat OOB and C&P: Continue to develop and integrate capabilities to meet fleet requirements identified and prioritized at the CRWG for integrating order of battle maintenance, and intelligence support to the Common Operational Picture into commercial COTS. Continue to provide Intel application support for IT-21 workstations. Continue to develop data fills for the Intel database. Continue to implement and enhance a fully functional MIDB interface mechanism that enables GCCS-M intelligence applications, combat systems, and mission planning systems to access data within MIDB without having to change their software architecture with each MIDB release from DIA. Continue to provide increased functionality in the Intelligence and Imagery applications to support capabilities in the DII COE, including real-time, updates to mapping, communication, and track management tools. Continue to integrate Intel data into the SCI enclave. Continue to develop enhanced functional capability as identified in CRWG requirements.
- (U) (\$189) Spectral and Environmental Analysis: Continue to develop and enhance Intel data sources for C2WC, nodal analysis, and other GCCS-M applications.
- (U) (\$189) Targeting / Land Track: Continue to develop and improve capability of Intel and Imagery targeting systems. Continue integration of the Joint Targeting Toolbox products into GCCS-M. Continue to integrate SCI SIGINT support to GENSER Command and Control capabilities in support of time critical targeting.

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

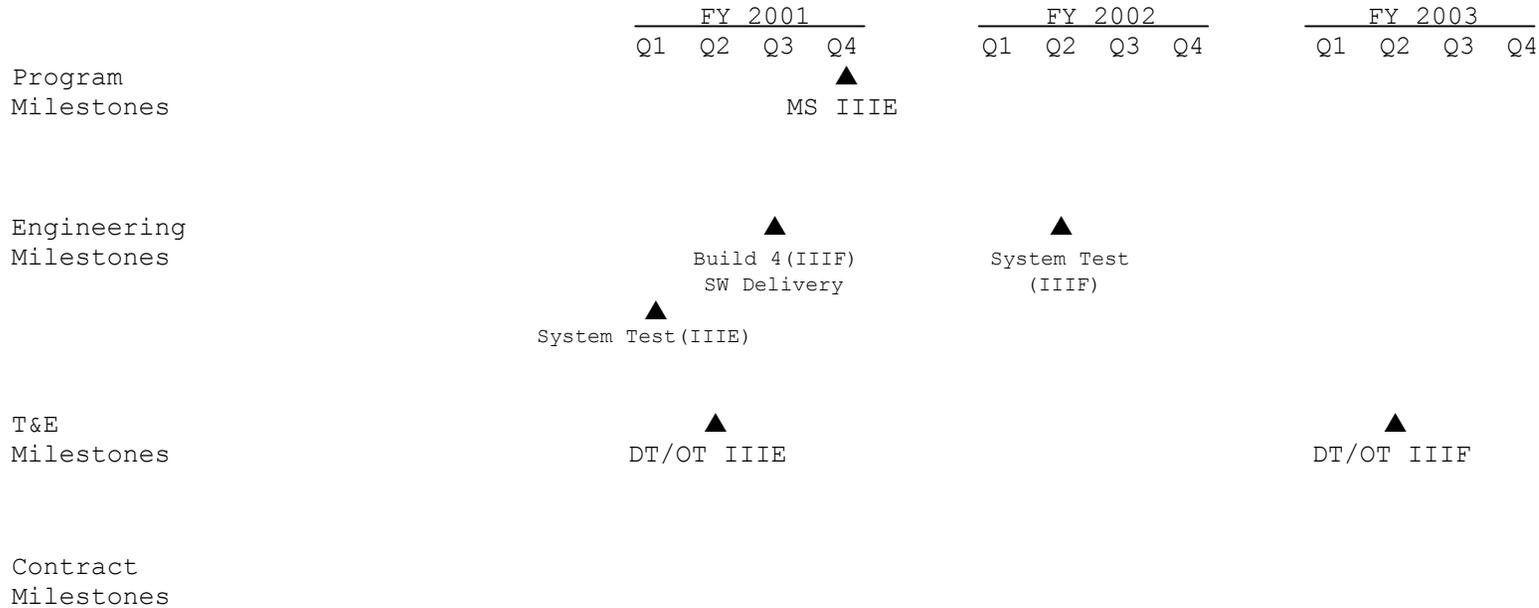
PROJECT TITLE: GCCS-M Intel Apps

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) N/A

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) GCCS-M Maritime Applications

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:



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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	12,503	3,704	12/00	597	12/01	660	11/02	CONT.	CONT.	
Software/Product Development	CPFF	PRC				2,973	10/01	1,333	11/02	CONT.	CONT.	
Software/Product Development	WX	SSC San Diego				793	10/01	377	11/02	CONT.	CONT.	
Software/Product Development	WX	SSC Charleston				1,487	10/01	754	11/02	CONT.	CONT.	
Subtotal Product Development	Various	Various	12,503	3,704	12/00	5,850	12/01	3,124	11/02	CONT.	CONT.	
Remarks:												
System Engineering	Various	Various	14,862	2,771	12/00	648	12/01	439	11/02	CONT.	CONT.	
Subtotal Support	Various	Various	14,862	2,771	12/00	648	12/01	439	11/02	CONT.	CONT.	
Remarks:												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	2,056	0		0		0		CONT.	CONT.	
Subtotal T&E	PD	OPTEVFOR	2,056	0		0		0		CONT.	CONT.	
Remarks												
Project Management	CFFF	Various	603	20	Var.	40	Var.	47	Var.	CONT.	CONT.	
Travel	Various	HQ	1,411	0	Var.	0	Var.			CONT.	CONT.	
Subtotal Management	Various	Various	2,014	20	Var.	40	Var.	47	Var.	CONT.	CONT.	
Remarks												
Total Cost	Various	Various	31,435	6,495	Var.	6,538	Var.	3,610		CONT.	CONT.	
Remarks												

(U) COST (Dollars in thousands)

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Exhibit R-2A, PROJECT COST ANALYSIS

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X2305 GCCS-M Common Apps	10,402	10,421	12,808	14,151	11,095	15,450	11,886	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The GCCS-M Common Apps program contains the fundamental building blocks and common applications for all fielded Global Command and Control System (Maritime) C4I systems in the Navy, Marine Corps, and Coast Guard. It is the Navy's tactical implementation of the Global Command and Control System (GCCS) which provides the warfighter: (1) timely access to battlefield information, and (2) state-of-the-art information processing capability to support the Command and Control of maritime forces through a combination of communications, intelligence and combat system interfaces.

The Navy Common Operating Environment program is a core function of the GCCS-M Common Apps in that it serves as the system integration point for Command and Control systems in the Naval services. The program has the responsibility of working with developers throughout the Navy to incorporate the requirements of their users so that they might quickly and efficiently integrate and transform present stovepipe capabilities into an interoperable C4I architecture. As the number of legacy systems migrating to the Defense Information Infrastructure Common Operating Environment (DII COE) continues to grow, resources for rapidly folding them into the service extensions must keep pace as the complexity and size of the COE grows. As a product of evolutionary acquisition, the Navy COE will continue to evolve with the DII COE, new technology, and COMMERCIAL-OFF-THE-SHELF (COTS) products.

GCCS-M Common Apps includes all C4I applications required to fully support Navy joint interoperability in the littoral environment, and includes all common functions such as track database management, message processing, display implementation, correlation and system architecture migration in order to ensure a coherent and consistent implementation of C4I architectures in the Fleet.

NOTE: Defense Emergency Response Fund: (\$6M) Naval Fires Network (NFN) is a transformational system that provides real time intelligence correlation, sensor control, target generation, mission planning, engagement and battle damage assessment. This capability is enabled by combining, and ultimately integrating, "best of breed" elements of three existing systems into a converged architecture: Joint Service Imagery Processing System-Navy (JSIPS-N), Tactical Exploitation System-Navy (TES-N) and Global Command and Control System-Maritime (GCCS-M).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$256) Architecture: Implemented real-time capabilities into DII COE in order to support migration of high performance systems to GCCS-M architecture, specifically addressing correlation algorithms based on kinematics.
- (U) (\$158) Architecture: Continued to evolve the USN C4I messaging architecture to incorporate emerging DII-COE based messaging components (e.g. CMP, DMS, etc.).
- (U) (\$605) Useability: Redefined and evolved the PC/NT Common Operating Environment. Continued the migration of Unix based segments and applications to the NT COE to support IT-21.
- (U) (\$810) Architecture: Refined and continued to develop the system architecture and products to evolve USN C4I systems from a FOTC/OTCIXS/BGBDM based network towards one that takes advantage of TCP/IP, LANs, and WANs (JMCOS/ADNS, and SIPRNET).
- (U) (\$177) Useability: Implemented INFOSEC products into the C4I software architecture.
- (U) (\$382) JPN / TADILS / Broadcasts: Implemented DII COE compliant multi-source and multi-sensor correlation and fusion software segment to support Navy, Joint, and coalition requirements.
- (U) (\$112) Imagery / Video Processing: Developed and implemented integrated shipboard architectures, which utilize a common set of NIMA product services/servers, including geo-spatially distributed off-ship libraries.
- (U) (\$205) JPN / TADILS / Broadcasts: Developed and implemented core capabilities associated with strategic and tactical C4I management of Theater Battle Management (TBM) data and tools for decision-making and COP fusion of TBM data.
- (U) (\$84) JPN / TADILS / Broadcasts: Developed and implemented Mil-std-2525A and supplemental symbology to support COP fusion and display, focusing on completion of 3D symbol sets.
- (U) (\$363) Useability: Continued to develop and integrate GCCS (Joint) segments into GCCS-M.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$279) Targeting / Land Track: Developed and implemented interoperable architectures for integration of Position Location Information (PLI) data in the COP, developing correlation algorithms required to correlate/de-correlate land based tracks in a joint battle environment.
- (U) (\$2,149) Architecture: Continued implementation of DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development and application of maritime extensions of software fixes and implementation of Navy-unique requirements.
- (U) (\$298) Architecture: Continued to develop the 3-tier architecture (3TA) (Data Servers, application servers, display & presentation) to support the transition of the USN C4I from the current client/server model. This will streamline the data maintenance function to data centers, and reduce overall system administration tasks/costs. The 3TA will enable the thin client capability required by the warfighter. Effort to support the evolution of the DII COE architecture to 3TA.
- (U) (\$177) Targeting / Land Track: Enabled JSTARS/GCCS-M connectivity, addressing high bandwidth communication pipes such as Common High-Bandwidth Data Link (CHBDL).
- (U) (\$558) JPN / TADILS / Broadcasts: Continued TADIL interoperability development as determined by CRWG and joint requirement efforts.
- (U) (\$121) JPN / TADILS / Broadcasts: Continued to incorporate TBMCS aboard USN Flagships (LCC, AGF, CV/CVN) and developed the required interfaces, procedures to interoperate with GCCS-M.
- (U) (\$181) Aircraft Mission Planning / TACMOBILE: Continued to develop/enhance Interface support for Mission Planning.
- (U) (\$149) Useability: Incorporated USMC MAGTF C4I based systems aboard USN amphibious and command ships (LCC, AGF, etc.). Developed conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corp Units.
- (U) (\$130) Useability: Continued to develop/enhance/incorporate tools and functionality that support joint and coalition C4I warfare. Developed conops/procedures/tests/exercises that implement coalition interoperability.
- (U) (\$149) Testing: Developed interfaces/conops/procedures to take advantage of the LAN/WAN communications provided by JMCOMS/ADNS. Performed land and sea based testing of the integrated C4I architecture.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$74) Spectral and Environmental Analysis: Continued to develop capability for automatic interface and update with SIIP and METOC.
- (U) (\$238) Testing: Developed, integrated, tested, and prototyped a COTS based digital video system to accomplish full motion video transmission inter-ship, intra-ship, and ship-to-shore.
- (U) (\$293) Architecture: Continued to design/develop Security Architecture for Naval C4I systems.
- (U) (\$102) Useability: Developed a miniaturized prototype GCCS-M hardware suite for use on submarines. Investigated latest COTS display and large screen projector technology for use in GCCS-M C3I system.
- (U) (\$1,216) Testing: Semi-annual testing of each DII COE build received from DISA, documentation and Configuration Management (CM) of required Software Test Report (STR) processes, and distribution to Navy DII COE customers.
- (U) (\$242) Testing: Supported the proof of concept testing in exercise environments of emerging technology in the C4I arena.
- (U) (\$605) Testing: Performed systems testing on the integrated components of the Naval C4I architecture.
- (U) (\$289) Testing: Designed and developed systems documentation to support test, evaluation, and fielding of C4I systems.

2. (U) FY 2002 PLAN:

Per the attached schedule, FY02 is a critical year leading up to DT/OT of GCCS-M Increment IIIF. Failure to complete capability planned in the Common project for Increment IIIF will result in a breach of negotiated interfaces with several other programs, including Area Air Defense Coordinator (AADC), Navy Fires Control System (NFCS), Advanced Tomahawk Weapons Control System (ATWCS) and Tactical Tomahawk Weapons Control System (TTWCS).

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U)(\$302) Aircraft Mission Planning / TACMOBILE: Continue to develop/enhance/interface aircraft mission planning systems. Enable mission planning or mission routes and plans to be displayed on GCCS-M along with other threat and blue force data. Continue to incorporate web-enabled TBMCS and develop the required interfaces and procedures that interoperate with GCCS-M.
- (U)(\$1,784) Web-Enabling/IT-21: Continue to develop the N-tier architecture to support the transition of the USN C4I from the current client/server model to a web-enabled architecture per commercial e-commerce and e-business standards. Provide security infrastructure that will support SI and Collateral levels. Research and implement a public key exchange capability that enables internet-based applications such as web, e-mail, newsgroups to access a wide range of data over the DoD enterprise and maintain consistency with the DoD Public Key Infrastructure (PKI) policy. Incorporate development efforts to leverage emerging COTS products in support of IT-21 as adopted by commercial industry.
- (U)(\$352) Readiness: Provide readiness capabilities, which integrate with Joint and coalition forces, including web-based integration with GCCS-Joint, JOPES, and similar theater-level C4I systems.
- (U)(\$534) Combat Systems Interface: Provide C4I support of combat systems interfaces. Continue development of track management/correlation/merge processing as specified in WS-19702/1 to enable full exchange of tracks between GCCS-M, Aegis, Common Cover & Deception (C&D), Advanced Combat Direction System (ACDS), Ship Self Defense System (SSDS), Naval Fire Control System (NFCS) and other emerging combat systems. Modify track exchange architecture to promote orderly merging of OTH data between ATWCS/TTWCS/GCCS-M, including support for backwards compatibility of track databases. As required, provide support for Ground Order of Battle data to the combat system. Provide support for combat systems to utilize GCCS-M subscription and other web-based methodologies to obtain tailored intelligence and imagery products for analysis and display. Ensure full tactical data link message sets can be transmitted and received across the interface.
- (U)(\$4,778) JPN / TADILS / BROADCASTS: Support Joint/coalition warfare by developing an interoperable & scalable C4I system. Implement emerging TIBS requirements identified by the CRWG. Modernize TIBS to support the data feeds provided by advanced receiving systems, including IBS. Integrate and support interfaces to the Joint Tactical Terminal Control Client. Utilize data compression and improved multicast techniques to reduce the amount of bandwidth required to disseminate the COP, including support for new Fleet requirements emerging from the CRWG. Enhance and improve COP Sync Tools per CRWG direction, including implementation of a capability for CST to operate in a Quality of Service mode so that multicast IP transmissions can be managed over the IT-21 infrastructure. Provide an automated mechanism for replicating web and newsgroup data from ship's servers to

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

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PROGRAM ELEMENT: 0604231N

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PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

the Network Operations Centers (NOCs). Web-based replication mechanisms will enable tactically relevant data to be assessed in near real-time by shore commands without using ship bandwidth, compromising firewall security, or placing additional burdens on the NOC or ship. Continue to implement DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development and application of maritime extensions of SW fixes, and implementation of Navy-unique requirements. Develop track and communication management capabilities that utilize emerging capabilities of the DII/COE and COTS products. Support promulgation of the COP via industry standard COTS infrastructures.

- (U) (\$743) Targeting / Land Track: Provide enhanced capability for the Naval JSTARS Interface segment per Fleet direction at the CRWG, with full utilization of the Joint Mapping Toolkit. Incorporate the ability to provide radar services requests to the JSTARS aircraft. Integrate fire control call for fire capability into the JTT/GCCS-M/JSIPS-N targeting architecture. Expand ELINT data processing in GCCS-M to process specific emitter id data provided by enhanced sensor packages aboard P-3 AIP, U-2 and other national assets. COMEXT/MAREXT: Continue to integrate the Moving Target Exploitation (MTE) capability into JSTARS Interface, providing the ability to automatically initiate and maintain tracks on potential targets. Integrate Joint Collaborative products into GCCS-M to enable analysts to exchange application and text data over IP communications. Integrate and web-enable the Joint Targeting Toolbox.
- (U) (\$1,214) Testing: Support the proof of concept testing in exercise environments of emerging technology in the C4I arena. Perform systems testing on the integrated components of the Naval C4I architecture. Conduct operational test.
- (U) (\$714) Useability: (COMEXT/MAREXT) Develop and enhance an Enterprise Management capability within GCCS-M to enable remote monitoring and inventory of network and computing assets associated with the system. Enable fleet engineering activities and administrators to use enterprise management tools to remotely update software packages on PCs over the LAN, decreasing administrative burden and staffing requirements. Provide ability to translate between the two environments, as well as the ability for tactical systems to exchange data updates over both mechanisms.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

3. (U) FY 2003 PLAN:

- (U) (\$876) Aircraft Mission Planning / TACMOBILE: Continue to develop/enhance interface support for mission planning systems. Continue to enable mission planning data and mission routes and plans to be displayed on GCCS-M along with other threat and blue force data. Continue to incorporate web-based TBMCs and develop the required interfaces, procedures to interoperate with GCCS-M.
- (U) (\$2,045) Web-Enabling/IT-21: Continue to develop the N-tier architecture to support the transition of the USN C4I from the current client/server model to a web-centric, scaleable system architecture. Continue to web-enable applications using commercial e-business standards. Continue to develop and implement security infrastructure that will support SI and Collateral levels. Research and implement a public key exchange capability that enables Internet-based applications such as web, e-mail, newsgroups to access a wide range of data over the DoD enterprise and maintain consistency with the DoD Public Key Infrastructure (PKI) policy. Continue to develop and integrate new releases of COTS products such as MS Office with GCCS-M in support of IT-21.
- (U) (\$389) Readiness: Continue to develop and integrate readiness capabilities to satisfy interoperability requirements of Joint and coalition forces, including integration with GCCS-Joint, JOPES, and similar theater-level C4I systems.
- (U) (\$691) Combat Systems Interface: Continue to provide C4I research and developmental support to combat systems interfaces. Evolve combat system interfaces to web-enabled standards such as XML. Continue development of track management, correlation, and merge processing as specified in WS-19702/1 to enable full exchange of tracks between GCCS-M, and combat systems such as Aegis, Common C&D, ACDS, SSDS, and NFCS. Continue to provide support for combat systems to utilize GCCS-M subscription and other web-enabled methodologies to obtain tailored intelligence and imagery products for analysis and display.
- (U) (\$4,728) JPN / TADILS / BROADCASTS: Continue to support Joint/coalition warfare by developing an interoperable & scalable C4I system for managing tracks, data links, communications, and sensors. Incorporate requirements that have been validated and prioritized by the Fleet through the CRWG process. Continue to integrate with and develop interfaces to TIBS, IBS, and the Joint Tactical Terminal Control Client. Continue to develop and integrate COP Sync Tools per CRWG direction, and incorporate other quality of service enhancements to leverage the IT-21 investment. Continue to implement DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

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PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

and application of maritime extensions of SW fixes, and implementation of Maritime-unique requirements. Continue to develop and integrate track management capabilities that utilize emerging capabilities of the DII/COE and COTS products. Continue to research and develop industry-standard COTS solutions to distribute the COP.

- (U)(\$1,363) Targeting / Land Track: Continue to provide support for integration of Command and Control systems with targeting systems at the Naval and Joint levels. Incorporate requirements identified and validated by the CRWG into GCCS-M. Continue to provide enhanced capability for the Naval JSTARS Interface segment per Fleet direction at the CRWG, with full utilization of the Joint Mapping Toolkit. Continue to integrate the Moving Target Exploitation (MTE) capability into JSTARS Interface, providing the ability to automatically initiate and maintain tracks on potential targets. Continue to develop and integrate Joint Collaborative products into GCCS-M to enable analysts to exchange application and text data over IP communications. Continue to integrate Joint Targeting Toolbox and enhance per CRWG direction.
- (U)(\$1,811) Testing: Continue to conduct proof of concept testing in exercise environments of emerging technology in the C4I arena. Continue to perform systems testing on the integrated components of the Naval C4I architecture developed as part of GCCS-M. Conduct operational test.
- (U)(\$905) Useability: Continue to develop and enhance an Enterprise Management capability within GCCS-M to enable remote monitoring and inventory of network and computing assets associated with the system. Implement requirements identified at the CRWG, which facilitate system administration tasks. Continue to enable fleet engineering activities and administrators to use enterprise management tools to remotely update software packages on PCs over the LAN, decreasing administrative burden and staffing requirements.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

NUMBER	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	TO	TOTAL
TITLE	ACTUAL	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	COMPLETE	PROGRAM
DERF R&D	0	6,000	0	0	0	0	0	0	6,000

C. (U) ACQUISITION STRATEGY: N/A

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DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

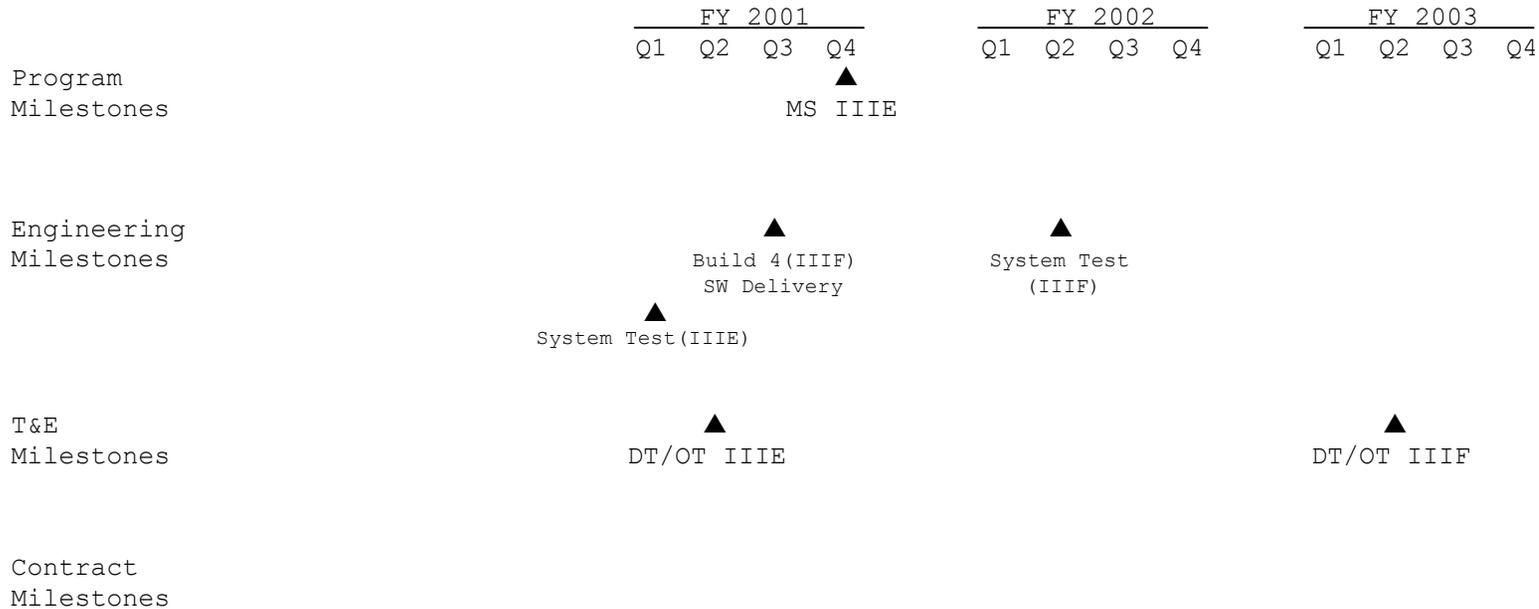
PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

D. (U) SCHEDULE PROFILE:



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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	CPFF	INRI, Reston, VA	7,275	3,515	10/00	3,172	10/01	3,870	11/02	CONT.	CONT.	
Software/Product Development	WX	SSC-San Diego	1,116	912	10/00	2,478	10/01	2,997	11/02	CONT.	CONT.	
Software/Product Development	CPFF	Delfin	1,400	946	10/00	0	10/01	0		CONT.	CONT.	
Software/Product Development	Various	Various	9,297	1,622	10/00	1,847	10/01	2,886	11/02	CONT.	CONT.	
Subtotal Product Development	Various	Various	19,088	6,995	10/00	7,497	10/01	9,753	11/02	CONT.	CONT.	
Remarks:												
System Engineering	WX	SSC-San Diego	800	257	10/00	416	10/01	428	11/02	CONT.	CONT.	
System Engineering	CPFF	INRI, Reston, VA	718	225	10/00	248	10/01	268	11/02	CONT.	CONT.	
System Engineering	Various	Various	2,274	337	10/00	398	10/01	479	11/02	CONT.	CONT.	
Subtotal Support	Various	Various	3,792	819	10/00	1,062	10/01	1,175	11/02	CONT.	CONT.	
Remarks:												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	150	209	10/00	223	10/01	219	11/02	CONT.	CONT.	
Operational Test & Evaluation	Various	NTCSI	60	0	10/00	0	10/01			CONT.	CONT.	
Developmental Test & Eval.	WX	SSC-SD	1,700	1,471	10/00	724	10/01	716	11/02	CONT.	CONT.	
Developmental Test & Eval.	Various	Various	100	289	10/00	246	10/01	240	11/02	CONT.	CONT.	
Subtotal T&E			2,010	1,969	10/00	1,193	10/01	1,175	11/02	CONT.	CONT.	
Remarks												
Project Management	Various	Various	560	489	Var.	520	Var.	535	Var.	CONT.	CONT.	
Travel	Various	Various	200	130	Var.	149	Var.	170	Var.	CONT.	CONT.	
Subtotal Management			760	619	Var.	669	Var.	705	Var.	CONT.	CONT.	
Remarks												
Total Cost	Various	Various	25,650	10,402	Var.	10,421	Var.	12,808	11/02	CONT.	CONT.	

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PROGRAM ELEMENT: 0604231N

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PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development												
Software/Product Development												
Software/Product Development												
Software/Product Development												
Subtotal Product Development												
Remarks:												
System Engineering	DERF	Various				6,000	12/01					
System Engineering												
System Engineering												
Subtotal Support						6,000	12/01					
Remarks												

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation												
Operational Test & Evaluation												
Developmental Test & Eval.												
Developmental Test & Eval.												
Subtotal T&E												
Remarks												
Project Management												
Travel												
Subtotal Management												
Remarks												
Total Cost						6,000						

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2306 Naval Simulation System	4,710	4,989	3,396	2,840	2,213	1,342	473	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Simulation System (NSS) provides a capability to simulate the execution of all Naval Warfare including Operations Other Than War to be used for a number of related purposes. Fleet Command Centers, both ashore and afloat will use this capability for Course of Action Assessment; that is, to assess the effectiveness of operational plans with respect to measures defined by the fleet planner. NSS also supports fleet operations by providing a capability to inject simulated platform, system, or commander level entities into real world Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems, and by providing automated tools for conducting post-exercise analyses. Acquisition Planners in OPNAV will use this capability to conduct requirements analysis and cost effectiveness analysis for new Naval systems. NSS provides a comprehensive ability to simulate and assess Naval and joint CONOPS and system/platform/force level capabilities. NSS explicitly accounts for C4ISR interactions among all Warfare Mission Areas (WMAs). In each of these applications, NSS provides detailed analyses of performance including traceability of the warfighting outcome to specific components of the "sensor to decision-maker to shooter" architecture.

The Naval Simulation System will also support Command Level training for operational forces at the Task Force or Battlegroup level. In addition, the Naval Simulation System will support distributed computing on multiple High Performance Computers connected together on a network such as the Defense Information Infrastructure and Fleet Operational Communication Links at multiple classification levels. The same networks that are used to provide access to distributed computing will also be used for Distributed Collaborative Planning by means of which planners at different sites with responsibility for different aspects of the plan can work together collaboratively to produce a single coherent plan. This collaborative planning capability will be used to support Joint Planning between different service components. The Naval Simulation System will undergo Verification and Validation during its design and implementations phases, and will be Accredited for each intended major application. This effort funds the development and maintenance of the Naval Simulation System and the infrastructure of subject matter experts needed for ongoing Verification, Validation, and Accreditation (VV&A) and Configuration Control Management.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 Accomplishments:

- (U) (\$580) Updated NSS Segmentation on GCCS-M. Conducted independent testing and integration of the NSS model engine, Object Oriented Database, Object Oriented Database Management System, and Campaign Analysis Tool (CAT) GUI for integration into GCCS-M. Conducted independent testing of the generic NSS model engine Application Programmer Interface (API), the JMV (GCCS-M map server) interface to GCCS-M and TMS. Updated all documentation including user's manual. Supported all IT-21 Block 1 meetings.
- (U) (\$114) Continued development of C4ISR functionality in support of Strike Warfare (STK).
- (U) (\$150) Continued development of STK functionality modules. Improved NSS Joint Forces Air Component Commander (JFACC) planning tool.
- (U) (\$124) Initiated Mine Warfare (MIW) model. Initiated development of AntiSubmarine Warfare (ASW) functionality module and ASW COA planning tool. Continued development of Logistics (LOG) functionality module.
- (U) (\$125) Initiated development of Surface Warfare (SuW) functionality module and SuW COA planning tool.
- (U) (\$75) Initiated VV&A Subject Matter Expert (SME) activities. Included SME review of torpedo model and code development.
- (U) (\$959) Continued development of Decision Design Brief (DDB) for Graphical User Interface (GUI) improvement. Implemented GUI improvement technology as specified by DDB.
- (U) (\$190) Initiated Integration of GCCS-M Operational Databases to gain access of Common Operational Picture (COP).
- (U) (\$75) Initiated integration of GCCS-M Environmental Databases including Atmospheric, Terrain databases, Electromagnetic and Littoral databases into NSS.
- (U) (\$335) Established testing facilities at Naval Post Graduate School (NPGS) and conducted Independent Testing.

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Exhibit R-2A, Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

- (U) (\$108) Supported NPGS Fires Analysis project and FBEs 01 planning, wargaming, and experimentation.
- (U) (\$230) Added/improved the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.
- (U) (\$225) Identified and imported the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.
- (U) (\$215) Supported Integrated Product Teams (IPTs) addressing GCCS-M implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Assessed implementation of Earned Value management system.
- (U) (\$900) Supported NSS Configuration Control Board. Developed DDBs for NSS builds v3.0, v3.1, v3.1.1, v3.1.1p1, and v.3.2. Implemented and conducted factory testing of the NSS builds v3.0, v3.1, v3.1.1, v3.1.1p1, and v.3.2 for deployment certification. Performed factory testing on all outstanding SCRs. Conducted independent testing of all newly developed software code.
- (U) (\$305) Implemented Lockheed Martin SCRs and provided monthly patches to CPF.

2. (U) FY 2002 PLAN:

- (U) (\$556) Interface NSS with the JMV (Map Server) and COP. Perform assessment to determine which Tactical Decision Aids (TDAs) are supportive of meeting NSS ORD requirements. Conduct independent testing on all newly developed software. Continue development of TMD.
- (U) (\$275) Continue development of C4ISR functionality in support of ASW, SuW, AW, MIW/MCM including physical environmental modeling, upgrade of MOE, GUI enhancements and industry versions of NSS.
- (U) (\$289) Continue development of Surface Warfare (SuW) functionality module and planning tool. Initiate development of Amphibious Warfare (AMW) functionality module and planning tool.
- (U) (\$152) Continue Mine Warfare (MIW) and Mine Counter Mine (MCM), WMA and DA.

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Exhibit R-2A, Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

- (U) (\$224) Continue development of LOG functionality module. Initiate development of Naval Coastal Warfare (NCW) functionality module and planning tool. Continue development of Strike WMA and DA.
- (U) (\$288) Support VV&A Subject Matter Expert (SME) activities. Include review of all conceptual models and code development.
- (U) (\$250) Continue implementation of run-time improvement technology as specified by DDB.
- (U) (\$190) Implement Operational Databases including current tactical picture and targeting databases. Continue Integration of Operational Databases including Common Operational Picture (COP), and JMTC terrain data.
- (U) (\$75) Continue support to NPGS Fires Analysis project and FBES 02 planning, wargaming, and experimentation.
- (U) (\$185) Continue support to testing facilities at Naval Post Graduate School (NPGS) and Independent Testing.
- (U) (\$130) Add/improve the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.
- (U) (\$205) Identify and import the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.
- (U) (\$1350) Implement, test, and document improvements to the NSS GUI CAT COA Tool. Provide for Training and Maintenance.
- (U) (\$115) Support Integrated Product Teams (IPTs) addressing Task Force Web (TFW) implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Continue assessment of Earned Value management system.
- (U) (\$500) Support NSS Configuration Control Board. Develop DDB for NSS build v3.3. Conduct factory testing of NSS build v3.3 for deployment certification. Conduct independent testing of all newly developed software code.
- (U) (\$205) Implement Lockheed Martin SCRs and provide monthly patches to CPF.

3. (U) FY 2003 PLAN:

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Exhibit R-2A, Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

- (U) (\$218) Test and integrate SuW functionality module and planning tool. Interface NSS with the current tactical picture and targeting databases. Conduct testing and integration for DII COE compliance. Continue integration of NSS with all relevant TDAs providing NSS with important functionality. Conduct independent testing on all newly developed software.
- (U) (\$275) Initiate development of C4ISR functionality in support of IW, AMW, and NCW.
- (U) (\$325) Initiate development of IW, NCW, and AMW functionality modules and planning tools. Continue development of LOG functionality modules.
- (U) (\$283) Initiate development of Military Operations Other Than War (MOOTW) and Ground Warfare functionality modules.
- (U) (\$250) Support VV&A Subject Matter Expert (SME) activities. Include review of all conceptual models and code development.
- (U) (\$175) Update DDB for Run time improvement. Continue to implement Run-time improvement technology as specified by DDB.
- (U) (\$125) Implement Operational Databases including Characteristics and Performance, and Readiness/Status databases.
- (U) (\$410) Continue implementation of Environmental Databases including Atmospheric, Terrain, Electromagnetic and Littoral. Develop DDB for 3-D display capability.
- (U) (\$75) Continue support to FBEs 03 planning, wargaming, and experimentation.
- (U) (\$130) Add/improve the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.
- (U) (\$125) Identify and import the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.

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Exhibit R-2A, Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

- (U) (\$270) Continue to Implement, test, and document improvements to the NSS GUI CAT COA Tool. Provide for Training and Maintenance.
- (U) (\$115) Support Integrated Product Teams (IPTs) addressing TFW implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Continue assessment of Earned Value management system.
- (U) (\$500) Support NSS Configuration Control Board. Develop DDB for NSS build v3.4. Conduct factory testing of NSS build v3.4, for deployment certification. Conduct independent testing of all newly developed software code.
- (U) (\$120) Continued documentation of Analyst Guide to the detail required for conceptual model.

B. (U) OTHER PROGRAM SUMMARY: Not Applicable.

	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OMN PE0204662N/1C1C	0	197	213	248	266	302	322	CONT.	CONT.

C. (U) ACQUISITION STRATEGY: N/A

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

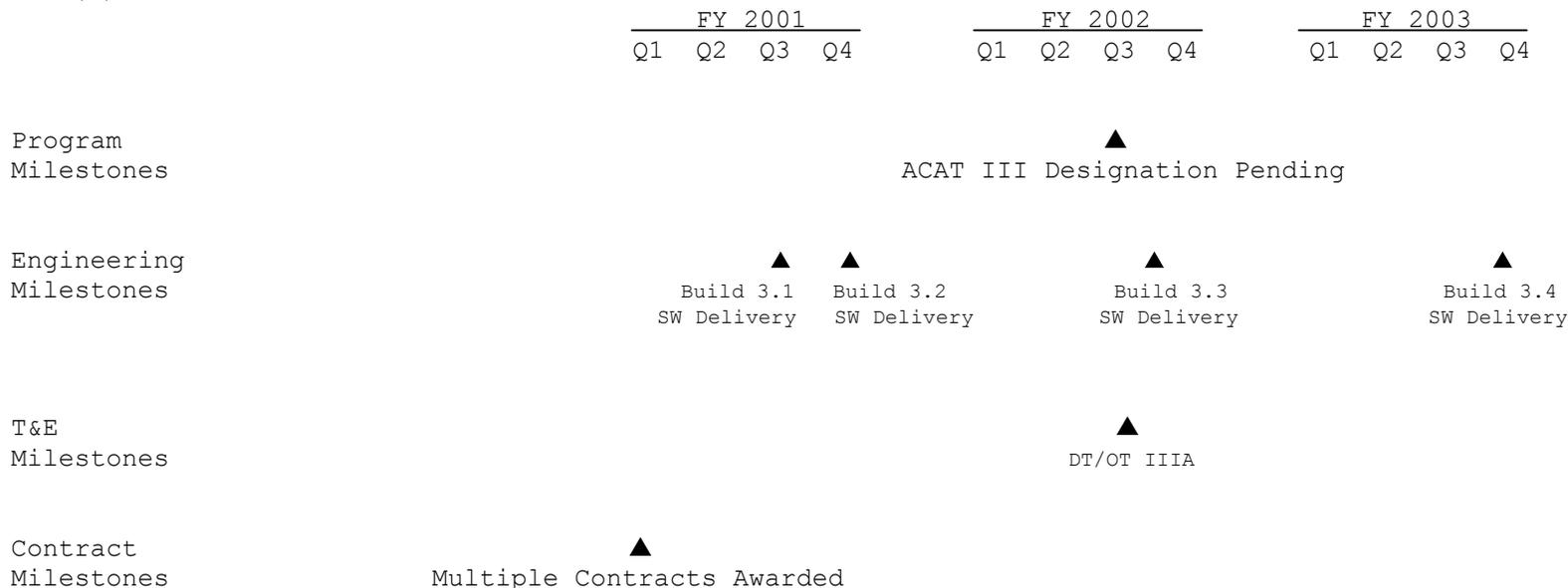
PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation Systems

D. (U) SCHEDULE PROFILE:



(Two competitive contracts awarded for the following tasks: S/W Development, Analysis, Training, Installation, Independent Testing and VV&A SME (Verification, Validation and Accreditation Subject Matter Expert))

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EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	WR	VARIOUS	450	210	10/00	144	10/01	150	10/02	CONT.	CONT.	N/A
Licenses			120									
Tooling												
GFE												
Award Fees												
Subtotal Product Development			570	210		144		150		CONT.	CONT.	N/A
Remarks:												
Development Support Equipment												
Software Development	RX/WX	VARIOUS	3,100	3,138	10/00	3,483	10/01	2,124	10/02	CONT.	CONT.	N/A
Training Development			255	150	10/00	150	10/01	100	10/02	CONT.	CONT.	N/A
Integrated Logistics Support												
Configuration Management			415	250	10/00	250	10/01	178	10/02	CONT.	CONT.	N/A
Technical Data												
GFE												
Subtotal Support			3,770	3,538		3,883		2,402		CONT.	CONT.	N/A

Remarks:

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EXHIBIT R-3, RDT&E,N FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	RX/WX	VARIOUS	828	427	10/00	427	10/01	319	10/02	CONT.	CONT.	N/A
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			828	427		427		319		CONT.	CONT.	N/A
Remarks:												
Contractor Engineering Support												
Government Engineering Support	WR	SSC SD	1270	451	10/00	450	10/01	450	10/02	CONT.	CONT.	N/A
Program Management Support												
Program Management Personnel												
Travel	Various	HQ	103	84	10/00	85	10/01	75	10/02	CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management			1,373	535		535		525		CONT.	CONT.	N/A
Remarks:												
TOTAL COST			6,541	4,710		4,989		3,396		CONT.	CONT.	N/A
Remarks:												

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

(U) COST (Dollars in thousands)

PROJECT NUMBER	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO PROGRAM	TOTAL PROGRAM
X2307	Integrated Shipboard Network System (ISNS)								
	4,547	3,923	1,602	1,359	2,075	1,512	1,408	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Integrated Shipboard Network System (ISNS) program provides every Navy ship, including submarines, with a reliable, high-speed Local Area Network (LAN) that will provide LAN and Wide Area Network (WAN) access to the DISN WAN (Secure and Nonsecure Internet Protocol Router Network - SIPRNet and NIPRNet). It provides real-time information exchange between afloat units, Component Commanders, numbered Fleet Commanders and Fleet CINCs through the migration of existing legacy systems into the IT-21 strategy and is a key factor in the implementation of the Navy's portion of Joint Vision 2010. Under the Navy's information modernization strategy, full synchronization of shipboard networks, mission and information applications and Radio/Satellite communications and shore data dissemination infrastructure, installations are necessary to ensure end-to-end mission capability. The ISNS program maximizes the use of both COTS software and hardware resulting in dependence on commercially supported hardware and software. Engineering and technical support is provided so that existing systems will keep pace with hardware and software that is supported commercially.

The Integrated Shipboard Networking System (ISNS) project uses a combination of high speed switches, routers, servers and workstations, commercial networking, security and operating system software technologies to provide network access to classified and unclassified applications for use by ship's force, embarked units, embarked commanders and their staffs. The Integrated Shipboard Networking System is integrated with the Automated Digital Networking System (ADNS) and existing RF systems.

Under the Navy's information modernization strategy, full synchronization of shipboard networks, mission and information applications, Radio/Satellite communications and shore data dissemination infrastructure, installations are necessary to ensure end-to-end mission capability. The Integrated Shipboard Networking System program is closely synchronized on a ship by ship basis with the following dependent programs: Global Command and Control System Maritime (GCCS-M) and Navy Tactical Command Support System (NTCSS); and with these other related programs: Navy Standard Integrated Personnel System (NSIPS), Theatre Medical Information Program - Maritime (TMIP-M), Defense Messaging System (DMS), Extremely High Frequency Satellite Communication (EHF SATCOM), Super High Frequency Satellite Communication (SHF SATCOM),

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Exhibit R-2A, PROJECT JUSTIFICATION

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

Commercial SATCOM, Ultra High Frequency Satellite Communication (UHF SATCOM), Digital Wideband Transmission System (DWTS), ADNS, Digital Modular Radio (DMR), Global Broadcasting System (GBS), Video Information Exchange System (VIXS) and Information Security (INFOSEC) programs. The ISNS program provides infrastructure to support implementation/fielding of programs listed above. If the ISNS infrastructure is not in place, a large segment of the Fleet will not be able to utilize the available capabilities to improve productivity and increase efficiency. The ISNS program maximizes the use of Commercial off the shelf (COTS) software and hardware resulting in dependence on these items being commercially supported. The LAN modernization rate must keep pace with hardware and software that is supported commercially.

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Exhibit R-2A, PROJECT JUSTIFICATION

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

- (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- 1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,831) Investigated, developed, and tested Enterprise-Wide LAN Management and Administration and prepared a strategy to merge that with other existing Integrated Network Management development solutions. A seamless management and administration capability has great potential for reducing complexity of network operation for sailors.
- (U) (\$1,824) Investigated emerging networking technologies such as, Next Generation LAN Protocols, Wireless LAN, Secure/Nonsecure Voice Integration and Internet Protocol Video for potential incorporation into the Shipboard LAN architecture. Eighteen month technology change cycles drove equipment availability and the Shipboard LAN's insertion of replacement technology.
- (U) (\$892) Investigated, developed and tested NT software scripting to provide more easily maintainable and flexible NT network services.

- 2. (U) FY 2002 PLAN:

- (U) (\$1,008) Investigate, develop and test server and workstation technology upgrades to incorporate into existing architecture. The ISNS program must prepare for efficient insertion of replacement technology being driven by an eighteen month technology change cycle.
- (U) (\$1,565) Investigate, develop and test Enterprise-Wide Network Management and Administration to merge with existing Integrated Network Management development solutions.
- (U) (\$600) Research and develop more complex e-mail security and general security systems as they relate to the Shipboard LAN infrastructure.
- (U) (\$750) Investigate, develop and test NT software scripting.

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Exhibit R-2A, PROJECT JUSTIFICATION

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

3. (U) FY 2003 PLAN:

- (U) (\$700) Investigate, develop and test switch technology upgrades to the Shipboard LAN architecture.
- (U) (\$902) Investigate, develop and test Next Generation LAN Protocols to incorporate into existing Shipboard LAN architecture to ensure that technology replacement continues to advance with the changing technology.

B. (U) OTHER PROGRAM SUMMARY: (Dollars in thousands)

		FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
(U)	OPN	92,137	46,493	73,017	132,735	77,187	211,158	45,276	CONT.	CONT.
(U)	O&MN	3,569	7,040	6,669	6,520	6,270	6,151	6,272	CONT.	CONT.

C. (U) ACQUISITION STRATEGY: Not applicable. This is not an acquisition program with milestones.

D. (U) SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Costs	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development												
1.1.1 Prime Mission Product	MIPR	FEDSIM/SAIC	0	697	12/00	650	12/01	253	12/02	CONT.	CONT.	
1.1.1 Prime Mission Product	WX	SSC CH	0	900	12/00	963	12/01	252	12/02	CONT.	CONT.	
1.1.1 Prime Mission Product	WX	SSC SD	314	400	12/00	350	12/01	200	12/02	CONT.	CONT.	
1.1.1 Prime Mission Product	TMM	EDS	191									
Subtotal Product Development			505	1,997		1,963		705		CONT.	CONT.	
Remarks:												
System Engineering												
1.1.1 System Engineering	MIPR	MITRE	0	204	10/00	210	10/01	145	12/02	CONT.	CONT.	
1.1.1 System Engineering	MIPR	FEDSIM/SAIC	0	580	12/00	600	12/01	222	12/02	CONT.	CONT.	
1.1.1 Systems Engineering	Various	Various	436	252	12/00	100	12/01			CONT.	CONT.	
Subtotal Support			436	1036		910		367		CONT.	CONT.	
Remarks												

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EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N
 PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2307
 PROJECT TITLE: Integrated Shipboard
 Networking System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WX	SSC Charl		305	12/00	250	12/01	100	12/02	CONT.	CONT	
	WX	SSC SD	0	669	12/00	350	12/01	200	12/02	CONT.	CONT	
	WX	SSC Ches	0	290	12/00	250	12/01	150	12/02	CONT.	CONT	
	WR	OPTEVFOR	0	100	12/00	100	12/01	80	12/02	CONT.	CONT	
Subtotal Operational T & E			0	1364		950		530				
Remarks												
Project Management	WX	SSC Charl	0	150	12/00	100	12/01	0				
Subtotal Management			0	150		100		0				
Remarks												
Total Cost			941	4,547		3,923		1,602		CONT.	CONT	

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X3032

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: NTCSS Enterprise
Database & MLDN

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X3032 NTCSS Enterprise Database & MLDN	0	3,928	5,016	4,308	4,059	2,949	3,513	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: PROJECT X3032 Navy Tactical Command Support Systems (NTCSS) Enterprise & Maritime Logistics Data Network (MLDN) - This RDT&E Project funding supports design, development and testing of two components of the NTCSS web initiative, NTCSS Enterprise Database and MLDN. The development of a web-enabled enterprise database for NTCSS application will place all NTCSS databases into a similar structure, allowing greater interoperability between applications. MLDN will facilitate the movement of administrative workload from ships to shore.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS: Not Applicable

2. (U) FY 2002 PLAN:

- (U) (\$3,928) Enterprise database design, development and testing. MLDN initiative starts with Business Process Improvement to identify which shipboard business can be put ashore.

3. (U) FY 2003 PLAN:

- (U) (\$5,016) Enterprise database application changes to the database structure, testing & support and documentation. MLDN tasks are focused on developing the communications and security architecture needed to implement the MLDN capability throughout the fleet, and life cycle support for existing platforms.

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X3032

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: NTCSS Enterprise
Database & MLDN

B. (U) OTHER PROGRAM FUNDING SUMMARY (Dollars in thousands)

<u>Appn</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	COST TO	TOTAL
	ACTUAL	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	COMPLETE	PROGRAM
OPN	55,083	38,599	46,818	57,657	37,378	71,351	17,143	CONT.	CONT.
OMN (BA-1)	15,409	19,948	28,414	34,395	31,776	39,018	22,233	CONT.	CONT.
OMN (BA-4)	19,035	20,846	22,271	22,085	20,990	21,544	22,109	CONT.	CONT.
OMN,R	617	553	558	557	553	552	567	CONT.	CONT.

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE: UNDER DEVELOPMENT

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Exhibit R-2A, PROJECT JUSTIFICATION

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FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X3032

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: NTCSS Enterprise
Database & MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0	0		600	10/01	34	10/02	CONT.	CONT.	
Systems Engineering	Various	Various	0	0		700	10/01		10/02	CONT.	CONT.	
Licenses	Various	Various	0	0		400	10/01	200	10/02	CONT.	CONT.	
Subtotal Product Development			0	0		1,700	10/01	234		CONT.	CONT.	
Remarks:												
Software Development	Various	Various	0	0		800	10/01	3,697	10/02	CONT.	CONT.	
Configuration Management	Various	Various	0	0		100	10/01	180	10/02	CONT.	CONT.	
Technical Data	Various	Various	0	0				100	10/02	CONT.	CONT.	
Subtotal Support			0	0		900	10/01	3,977		CONT.	CONT.	
Remarks:												

R-1 Shopping List-Item No. 101 - 73 of 77

UNCLASSIFIED

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X3032

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: NTCSS Enterprise

Database & MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0	0		35	10/01	275	10/02	CONT.	CONT.	
Subtotal T&E			0	0		35	10/01	275		CONT.	CONT.	
Remarks												
Contractor Engineering Support	Various	Various	0	0		1,263	Various	406	10/02	CONT.	CONT.	
Government Engineering Support	Various	Various	0	0		30	Various	124	10/02	CONT.	CONT.	
Subtotal Management			0	0		1,293	Various	530		CONT.	CONT.	
Remarks												
Total Cost	Various	Various	0	0	N/A	3,928	Various	5,016		CONT.	CONT.	
Remarks												

R-1 Shopping List-Item No. 101 - 74 of 77

UNCLASSIFIED

Exhibit R-2A, PROJECT COST ANALYSIS

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X9213

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: FORCEnet

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X9123 FORCEnet	0	0	20,000	20,000	20,000	0	0	0	0

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: PROJECT X9123 FORCEnet - FORCEnet is the architecture and building blocks of sensors, networks, decision aids, weapons, warriors, and supporting system integrated into a highly adaptive, human-centric, comprehensive system that operates from seabed to space, from sea to land. By exploiting existing and emerging technologies, FORCEnet enables dispersed human decision-makers to leverage military capabilities to achieve dominance across the entire mission landscape with joint, allied, and coalition partners.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS: Not Applicable

2. (U) FY 2002 PLAN:

- (U) (\$0) Not Applicable

3. (U) FY 2003 PLAN:

- (U) (\$20,000) Build/maintain Network Centric Architecture backbone, establish a common database and facilitate applications access and sharing.

B. (U) OTHER PROGRAM FUNDING SUMMARY: N/A

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE: UNDER DEVELOPMENT

R-1 Shopping List-Item No. 101 - 75 of 77

UNCLASSIFIED

Exhibit R-2A, PROJECT JUSTIFICATION

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X9213

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: FORCEnet

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0	0		0		1,000	10/02	CONT.	CONT.	
Systems Engineering	Various	Various	0	0		0		4,000	10/02	CONT.	CONT.	
Licenses	Various	Various	0	0		0		1,000	10/02	CONT.	CONT.	
Subtotal Product Development			0	0		0		6,000		CONT.	CONT.	
Remarks:												
Software Development	Various	Various	0	0		0		8,000	10/02	CONT.	CONT.	
Configuration Management	Various	Various	0	0		0		1,000	10/02	CONT.	CONT.	
Technical Data	Various	Various	0	0		0		1,000	10/02	CONT.	CONT.	
Subtotal Support			0	0		0		10,000		CONT.	CONT.	
Remarks:												

UNCLASSIFIED

UNCLASSIFIED

FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X9213

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: FORCEnet

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0	0		0		2,000	10/02	CONT.	CONT.	
Subtotal T&E			0	0		0		2,000		CONT.	CONT.	
Remarks												
Contractor Engineering Support	Various	Various	0	0		0		2,000	10/02	CONT.	CONT.	
Government Engineering Support	Various	Various	0	0		0		0		CONT.	CONT.	
Subtotal Management			0	0		0		2,000		CONT.	CONT.	
Remarks												
Total Cost	Various	Various	0	0	N/A	0		20,000		CONT.	CONT.	
Remarks												

R-1 Shopping List-Item No. 101 - 77 of 77

UNCLASSIFIED

Exhibit R-3, PROJECT COST ANALYSIS

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604234N, E-2C RADAR MODERNIZATION PROGRAM					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost				78.306	113.681	162.376	178.872	189.435	123.785	Continuing	Continuing
E3051 - (E-2C Radar Modernization Program)				78.306	113.681	162.376	178.872	189.435	123.785	Continuing	Continuing
Quantity of RDT&E Articles						1	1				
<p>*Two MYP E-2C aircraft will be modified in to provide RDT&E assets for the RMP program.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2C Radar Modernization Program (RMP) develops, demonstrates, and tests new radar technologies that modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. In addition, the RMP modernizes the E-2C avionics, provides improved battle space integration and improves the producibility of the entire weapons system. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and IFF/radar aperture integration. The resulting detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies were demonstrated in a ground environment in FY1999 and will continue to be refined through FY2003. This P.E. will be utilized for RMP pre-system development and demonstration (Pre-SD&D) in FY2002 followed by a phased SD&D beginning in FY2003 with the development of a Littoral Surveillance capability. RMP enters the production phase in FY2006-2007 and completes with a full rate production decision for a system compliant with the Joint Theater Air Missile Defense (JTAMD) mission needs statement in 2012.</p> <p>(U) JUSTIFICATION ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it encompasses the development and demonstration of new end-items prior to a production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 102

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM					PROJECT NUMBER AND NAME E3051, E-2C RMP					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				78.306	113.681	162.376	178.872	189.435	123.785	Continuing	Continuing
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2C Radar Modernization Program (RMP) develops, demonstrates, and tests new radar technologies that modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. In addition, the RMP modernizes the E-2C avionics, provides improved battle space integration and improves the producibility of the entire weapons system. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and IFF/radar aperture integration. The resulting detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies were demonstrated in a ground environment in FY1999 and will continue to be refined through FY2003. This P.E. will be utilized for RMP pre-system development and demonstration (Pre-SD&D) in FY2002 followed by a phased SD&D beginning in FY2003 with the development of a Littoral Surveillance capability. As part of the SD&D effort, two MYP E-2C aircraft will be modified in to provide RDT&E assets for the RMP program. The RMP enters the production phase in FY2006-2007 and completes with a full rate production decision for a system compliant with the Joint Theater Air Missile Defense (JTAMD) mission needs statement in 2012.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: Not Applicable.</p> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> -(U) (\$2.676) - Conduct System Requirement Review (SRR) for the NC-130H TAMD Configuration. -(U) (\$72.750) - E-2C RMP efforts to include system architecture trade studies, requirements analysis, radar system demonstration/validation, producibility enhancement and life cycle costs reduction efforts. Radar/IFF integration, and demonstration/validation of other mission avionics systems. -(U) (\$2.880) - Portion of extramural Program reserved for Small Business Innovation Research Assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> -(U) (\$4.217) - Conduct System Requirement Review (SRR) for the NC-130H TAMD Configuration. -(U) (\$2.262) - Conduct System Preliminary Design Review (PDR) and Critical Design Review (CRD) for the NC-130H TAMD Configuration. -(U) (\$1.455) - Procure Long Lead Material for NC-130H TAMD Configuration. -(U) (\$8.512) - Design and Fabricate HE2000 Weapon System Pallet for NC-130H TAMD Configuration. -(U) (\$5.862) - Enter into SD&D for E-2C RMP program; Conduct government oversight and engineering support in initial development of RMP design. -(U) (\$3.800) - Phase Depot Maintenance and support costs of NC-130H aircraft. -(U) (\$0.613) - Conduct government oversight and engineering support for NC-130H development efforts. -(U) (\$0.587) - Initiate NC-130H Support contract. -(U) (\$2.000) - Consulting services support for the development, refinement, and verification systems operational and functional requirements. -(U) (\$84.373) - Enter into SD&D for E-2C RMP program; conduct engineering and development efforts sufficient to meet the requirements for System Functional Review for the RMP weapons system and Preliminary Design Review for the RMP Littoral Surveillance. 											

R-1 SHOPPING LIST - Item No. 102

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
	FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604234N, E-2C RADAR MODERNIZATION PROGRAM	E3051, E-2C RMP	
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:		96.000	
(U) Adjustments from the FY2002 President's Budget:		-17.694	
(U) FY 2003 President's Budget Submit:		78.306	113.681
 CHANGE SUMMARY EXPLANATION:			
<p>(U) Funding: The FY 2002 net decrease of \$17.694 million consists of a \$17.000 million decrease for E-2C RMP KC-130 testbed (realigned to PE 0204152N) and a \$0.694 million decrease for undistributed congressional reduction.</p> <p>(U) Schedule: None.</p> <p>(U) Technical: Not Applicable.</p>			

R-1 SHOPPING LIST - Item No. 102

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2002																																																														
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PRO			PROJECT NUMBER AND NAME E3051, E-2C RMP																																																															
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007</th> <th style="text-align: right;">To Complete</th> </tr> </thead> <tbody> <tr> <td>APN 1/E-2C (LI #12 &13)</td> <td style="text-align: right;">312.375</td> <td style="text-align: right;">275.216</td> <td style="text-align: right;">295.451</td> <td style="text-align: right;">252.860</td> <td style="text-align: right;">324.871</td> <td style="text-align: right;">421.542</td> <td style="text-align: right;">398.906</td> <td style="text-align: right;">6776.439</td> </tr> <tr> <td>APN 5/E-2C (LI #35)</td> <td style="text-align: right;">49.829</td> <td style="text-align: right;">48.498</td> <td style="text-align: right;">17.195</td> <td style="text-align: right;">90.933</td> <td style="text-align: right;">9.559</td> <td style="text-align: right;">8.740</td> <td style="text-align: right;">8.600</td> <td style="text-align: right;">1331.900</td> </tr> <tr> <td>APN 6/E-2C (LI #49)</td> <td style="text-align: right;">21.733</td> <td style="text-align: right;">26.733</td> <td style="text-align: right;">4.082</td> <td style="text-align: right;">13.040</td> <td style="text-align: right;">7.313</td> <td style="text-align: right;">2.071</td> <td style="text-align: right;">5.750</td> <td style="text-align: right;">216.927</td> </tr> </tbody> </table> <p><u>Related RDT&E</u> (U) 0603658N (Ship Self Defense, CEC) (U) 0204152N (E2 Squadrons)</p> <p>(U) D. ACQUISITION STRATEGY: Not Applicable</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td>Q1/03 MS B Decision Q2/03 Conduct SRR for NC130H TAMD Config.</td> <td>Q1/06 NC-130H Phase III 1st Flt</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>Q4/02 Continue E-2C RMP dem/val effort</td> <td>Q1/03 RMP SFR Q2/03 RMP LS PDR</td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>Q1-Q2/02 award BOA, MSI, NC-130H Vehicle, Systems contracts</td> <td>Q1/03 SD&D Contract Award, NC-130H Vehicle Systems Contracts</td> <td></td> </tr> </tbody> </table>								<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	APN 1/E-2C (LI #12 &13)	312.375	275.216	295.451	252.860	324.871	421.542	398.906	6776.439	APN 5/E-2C (LI #35)	49.829	48.498	17.195	90.933	9.559	8.740	8.600	1331.900	APN 6/E-2C (LI #49)	21.733	26.733	4.082	13.040	7.313	2.071	5.750	216.927		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones			Q1/03 MS B Decision Q2/03 Conduct SRR for NC130H TAMD Config.	Q1/06 NC-130H Phase III 1st Flt	(U) Engineering Milestones		Q4/02 Continue E-2C RMP dem/val effort	Q1/03 RMP SFR Q2/03 RMP LS PDR		(U) T&E Milestones					(U) Contract Milestones		Q1-Q2/02 award BOA, MSI, NC-130H Vehicle, Systems contracts	Q1/03 SD&D Contract Award, NC-130H Vehicle Systems Contracts	
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete																																																												
APN 1/E-2C (LI #12 &13)	312.375	275.216	295.451	252.860	324.871	421.542	398.906	6776.439																																																												
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(U) T&E Milestones																																																																				
(U) Contract Milestones		Q1-Q2/02 award BOA, MSI, NC-130H Vehicle, Systems contracts	Q1/03 SD&D Contract Award, NC-130H Vehicle Systems Contracts																																																																	

R-1 SHOPPING LIST - Item No. 102

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604234N, E-2C RADAR MODERNIZATION PROGRAM				E3051, E-2C RMP					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware/Software Dev.	SS/CPFF	Classified				1.141	02/02	7.235	01/03		8.376	8.376
Hardware/Software Dev.	SS/CPFF	NGC, NY				1.140	02/02	9.798	01/03		10.938	10.938
E-2C RMP Dem/Val Continuation eft	SS/CPFF	NGC, NY				47.530	11/01				47.530	47.530
E-2C RMP Eng. Spt Services	C/CPFF	NAWCAD, PAX RIVER, MD				1.600	11/01	1.250	11/02		2.850	2.850
E-2C RMP Require. Analysis Spt	C/FP	TBD				0.776	01/02	0.750	11/02		1.526	1.526
Hardware/Software Dev.	SS/CPFF	Classified				17.150	12/01				17.150	17.150
E-2C RMP SD&D	SS/CPAFF	NGC, NY						84.373	11/02		84.373	84.373
Subtotal Product Development						69.337		103.406			172.743	
Remarks: New Project begins in FY2002.												
Government Eng. Spt	WR/WX	NAWCAD, PAX RIVER, MD				2.496	11/01	5.862	11/02	Continuing	Continuing	
Government Eng. Spt	WX/RC	NAWCAD, PAX RIVER, MD				0.395	02/02				0.395	
Government Eng. Spt	WR	NSWCDD, Dahlgren, VA				0.350	02/02				0.350	
Government Eng. Spt	WR	NRL, Washington, D.C.				0.164	02/02				0.164	
Government Eng. Spt	WR	NAWCAD, PAX RIVER, MD						0.613	11/02	Continuing	Continuing	
Government Eng. Spt	WR	NAWCAD, PAX RIVER, MD						3.800	11/02	Continuing	Continuing	
Subtotal Support						3.405		10.275		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: FEBRUARY 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604234N, E-2C RADAR MODERNIZATION PROGRAM			E3051, E-2C RMP						
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
Test & Evaluation	WR/WX	NAWCAD, PAX RIVER, MD				2.520	11/01				2.520	
Subtotal T&E						2.520					2.520	
Remarks:												
Management	WX/RX	NAWCAD, PAX RIVER, MD				0.149	11/01				0.149	
Travel	WR/WX	NAWCAD, PAX RIVER, MD				0.015	11/01				0.015	
SBIR Assessment						2.880					2.880	
Subtotal Management						3.044					3.044	
Remarks:												
Total Cost						78.306		113.681		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604245N USMC H-1 Upgrades					
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	455.611		133.324	170.448	241.384	80.547	54.506				1,135.820
H2279 USMC H-1 Upgrades	455.611		133.324	170.448	241.384	80.547	54.506				1,135.820
Quantity of RDT&E Articles	5										5
<p>Quantity of (5) RDT&E Engineering and Manufacturing Development (EMD) test articles were placed on contract prior to FY98 and remanufacture commenced in FY99. One aircraft will be used for live fire test and evaluation.</p> <p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1N utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft that remanufacture AH-1W/UH-1N's into AH-1Z/UH-1Y's include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This remanufacture will add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits will reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They will provide considerable growth potential for future weapon systems and avionics, which will significantly increase mission effectiveness and survivability. The cockpits will also include integration of on-board mission planning, communications, digital fire control, self-navigation, night targeting, and weapon systems management in nearly identical crew stations reducing training requirements. This remanufacture maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to a production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 103

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades					H2279 USMC H-1 Upgrades					
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	455.611	133.324	170.448	241.384	80.547	54.506				1,135.820	
RDT&E Articles Qty	5									5	

Quantity of (5) RDT&E Engineering and Manufacturing Development (EMD) test articles were placed on contract prior to FY98 and remanufacture commenced in FY99. One aircraft will be used for live fire test and evaluation.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1N utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft that remanufacture AH-1W/UH-1N's into AH-1Z/UH-1Y's include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This remanufacture will add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits will reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They will provide considerable growth potential for future weapon systems and avionics, which will significantly increase mission effectiveness and survivability. The cockpits will also include integration of on-board mission planning, communications, digital fire control, self-navigation, night targeting, and weapon systems management in nearly identical crew stations reducing training requirements. This remanufacture maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$ 49.589) Conducted pre-flight ground test and first flight of AH-1Z; continued mission computer software coding.
- (U) (\$ 14.893) Completed transmission bench testing and aircraft drive train validation.
- (U) (\$ 45.436) Continue tooling validation and assembly of remaining EMD aircraft including structural testing.
- (U) (\$ 22.706) Continued integrated logistics support (ILS) tasks including level of repair analysis, failure modes effects and criticality analysis, logistics support analysis, reliability centered maintenance analysis, integrated mechanical diagnostics, and documentation.
- (U) (\$.700) Continued live fire testing and evaluation.

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	H2279 USMC H-1 Upgrades
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$ 87.995) Conduct pre-flight ground test and first flight of UH-1Y, conduct high-altitude performance tests, handling qualities, gearbox tear-down/inspection. Continue tooling validation and assembly of remaining EMD aircraft including structural test.- (U) (\$ 18.434) Conduct external stores jettison test, firing loads and vibrations, and weapons system accuracy,- (U) (\$ 48.353) Conduct Integrated Avionics System (IAS) and weapons system evaluation.- (U) (\$ 7.555) Continue program development testing and live fire test and evaluation.- (U) (\$ 3.009) Continue ILS tasks including level of repair analysis, logistics support analysis, reliability centered maintenance analysis, integrated mechanical diagnostics.- (U) (\$ 5.102) Portion of extramural program reserved for Small Business Innovative Research assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (\$180.280) Continue engineering and technical design and development efforts, conduct Integrated Avionics System (IAS) testing and validation.- (U) (\$ 14.593) Continue program development testing and integrated flight test program efforts including non-firing loads and vibrations, seat trials, IAS validation, structural demonstration, firing loads and vibrations, weapons system accuracy and Operational Test Readiness Review (OTRR).- (U) (\$ 46.511) Continue engineering, training and logistics support efforts including level of repair analysis, logistics support analysis, reliability centered maintenance, and integrated mechanical diagnostics.		

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 3 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2002					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME						
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	H2279 USMC H-1 Upgrades						
(U) B. PROGRAM CHANGE SUMMARY:								
	FY 2001	FY 2002	FY 2003					
(U) FY 2002 President's Budget:	138.189	170.068						
(U) Adjustments from the FY 2002 President's Budget:	-4.865	0.380						
(U) FY 2003 President's Budget Submit:	133.324	170.448	241.384					
 CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: The FY 2001 net decrease of \$4.865 million reflects a decrease of \$4.227 million for a Small Business Innovation Research assessment and a reduction of \$0.638 million for reprioritization of requirements within the Navy. The FY 2002 net increase of \$0.380 million reflects an increase of \$1.900 million for non-recurring engineering of T700-GE-401C engines offset by a decrease of \$1.520 million for an undistributed congressional reduction.</p> <p>(U) Schedule: Not applicable.</p> <p>(U) Technical: Not applicable.</p>								
 (U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
P-1 LI #7, UH-1Y/AH-1Z (4BN/4BW)	5.987	0	0	282.824	254.568	416.022	465.283	3253.038
Quantity	0	0	0	9	11	22	28	210
FY01, FY02 and FY03 Integrated Mechanical Diagnostics (IMD) development is redirected to P.E. 0604245N								
 <u>Related RDT&E:</u>								
(U) P.E. 0604212N, ASW & Other Helo Development								
(U) P.E. 0603266N, AH-1T Composite Rotor Blade								

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Exhibit R-2, RDTEN Budget Item Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604245N USMC H-1 Upgrades	H2279 USMC H-1 Upgrades	
<p>(U) D. ACQUISITION STRATEGY: The H-1 Upgrades is an ACAT ID program which encompasses Engineering and Manufacturing Development of new end-items prior to a production approval decision. The prime contract is sole source to Bell Helicopter Textron, Inc. and is a remanufacture of AH-1W and UH-1N aircraft.</p> <p>(U) E. SCHEDULE PROFILE:</p>			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) Program Milestones			<u>TO COMPLETE</u> 1Q/04 UH/AH LRIP #1 1Q/05 UH/AH LRIP #2 4Q/05 AH-1Z/UH-1Y MS III 1Q/06 UH/AH FRP
(U) Engineering Milestones			
(U) T&E Milestones	1Q/01 1st Flight AH-1Z 2Q/01-4Q/01 UH/AH Test	1Q/02-4Q/02 UH/AH Test 1Q/02 1st Flight UH-1Y	1Q/03-4Q/04 UH/AH Test 4Q/04-2Q/05 UH/AH OPEVAL
(U) Contract Milestones			

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604245N USMC H-1 Upgrades			H2279 USMC H-1 Upgrades						
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
Major Contract	SS CPFF	Bell Helicopter, Ft. Worth, TX	7.851								7.851	7.851
Award Fees*		Bell Helicopter, Ft. Worth, TX	12.668								12.668	12.688
Major Contract	SS CPIF*	Bell Helicopter, Ft. Worth, TX	374.140	118.765	10/00	135.200	10/01	201.658	10/02	93.458	923.221	923.221
GFE	Various	Various	11.318	1.699	Various	2.580	Various	3.000	Various	3.985	22.582	
In-House Support (Field Activities)	WR	Various	35.567	3.493	Various	1.486	Various	4.081	Various	4.025	48.652	
In-House Support (Field Activities)	WR	NAWC Patuxent River		2.969	Various	8.900	Various	11.736	Various	10.853	34.458	
In-House Support (Field Activities)	WR	NADEP Cherry Point		1.523	Various	2.116	Various	2.019	Various	1.236	6.894	
In-House Support (Field Activities)	WR	NAWC Lakehurst		1.554	Various	2.734	Various	1.810	Various	0.594	6.692	
In-House Support (Field Activities)	WR	NAWC China Lake		1.253	Various	1.582	Various	1.650	Various	1.410	5.895	
In-House Support (Travel)	WR	Various	0.987	0.250	10/00	0.350	10/01	0.260	10/02	0.510	2.357	
Trainers	WR	Various	4.564	0.118	12/00	0.450	11/01	0.610	12/02	0.722	6.464	
Subtotal Product Development			447.095	131.624		155.398		226.824		116.793	1,077.734	
<p>*Remarks: Effective 1 May 00, cost plus incentive fee (CPIF) applies. Original contract was was a SS CPAF contract. Total award fee pool \$47,496,152, and to date \$12,668,250 has been awarded. Period #1 was 90%, period #2 87%, period #3 90%, period #4 77%, period #5 76%, and period #6 was 0%. Award fee activity was terminated on 30 April 2000.</p>												
Technical Engineering Services	C FFP	CCI, Inc.	1.855	0.624	11/00	0.745	11/01	0.495	11/02	0.665	4.384	4.384
Subtotal Support			1.855	0.624		0.745		0.495		0.665	4.384	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades					
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
Test and Evaluation	WR	NAWC Patuxent River	3.190	0.660	11/00	8.645	11/01	13.570	11/02	16.930	42.995	
Subtotal T&E			3.190	0.660		8.645		13.570		16.930	42.995	
Remarks:												
Program Office & Logistics Support	C FFP	CCI, Inc.	3.471	0.416	11/00	0.540	11/01	0.495	11/02	0.665	5.587	5.587
SBIR Assessment						5.120					5.120	
Subtotal Management			3.471	0.416		5.660		0.495		0.665	10.707	
Remarks:												
Total Cost			455.611	133.324		170.448		241.384		135.053	1,135.820	
Remarks:												

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 7 of 7)

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05						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 & 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
(Exhibit R-2, page 1 of 8)

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05		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"> -(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. -(U) (\$.382) Continued GFE environmental software improvements. -(U) (\$.937) Provided engineering support to EMD contract. -(U) (\$.366) Provided other engineering support and contractor support services. 											

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

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

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05		February 2002
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) 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
		<u>FY2003</u> 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. & Name</u>	FY 2001	FY 2002
(U) APN/P-3 Mod/(053800)		
(U) APN/SH-60R/(018200)		3.5
(U) OPN (404800) Q110B	9.7	10
(U) OPN (404800) HSF	1.9	1.1
<u>(U) Related RDT&E</u>		
(U) P.E. 0603254N (ASW Systems Development)		
		0
		3.5
	10	10.5
	0.7	0.7
		9.3
		0.7

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME 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&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-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-05			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:												

R-1 SHOPPING LIST - Item No. 104

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604262N / V-22					
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	6,580.105		217.925	442.787	420.109	364.303	225.321	62.435	46.207	15.289	8,374.481
H1425 V-22	6,580.105		217.925	442.787	420.109	364.303	225.321	62.435	46.207	15.289	8,374.481
Quantity of RDT&E Articles	4										4
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world.</p> <p>As a result of the December 11, 2000 mishap, the program office conducted comprehensive external and internal reviews of the program. An independent Blue Ribbon review panel was appointed to conduct this review. This budget reflects the recommended funding changes to correct deficiencies and move forward.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</p> <p>This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT (EMD) because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 105

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 1 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22				PROJECT NUMBER AND NAME H1425 / V-22					
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	6,580.105		217.925	442.787	420.109	364.303	225.321	62.435	46.207	15.289	8,374.481
RDT&E Articles Qty	4										4

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The V-22 Osprey is an ACAT-ID Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps with the MV-22; supplement the H-60 in the Navy with the HV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world.

As a result of the December 11, 2000 mishap, the program office conducted comprehensive external and internal reviews of the program. An independent Blue Ribbon review panel was appointed to conduct this review. This budget reflects the recommended funding changes to correct deficiencies and move forward.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$141.889) Continued MV/CV-22 development efforts by Bell-Boeing. Provided engine support and repair of repairables for MV/CV-22 flight testing. Continued MV/CV-22 software development efforts. Continued TF/TA radar development for the CV-22. Continued development of maintenance training equipment. Completed MV-22 Operational Flight Trainer / Full Fidelity Simulator (OFT/FFS) development. Continued contracted R&D efforts on aircraft #8 & #10.

- (U) (\$76.036) Continued in-house field activity support of ITT's and IPT's, logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Continued field R&D efforts on aircraft #8 & #10. Provided R&D support in the areas of R&M data analysis, loads and dynamics, electromagnetic environmental effects, MV/CV-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, MV/CV-22 avionics, facilities, computer support, structures, communications, Small Business Innovative Research, etc. Provided flight test support for CV-22 aircraft #7 and #9. Provided engineering and maintenance support for MV/CV-22 flight testing. Funded fuel costs for test aircraft and/or engines. Developed and tested flight control software required to fix anomalies that caused the Dec 00 mishap. Performed engineering investigations into line clearance issues. Performed multiple-lab testing of software warnings, cautions, and advisories (WCA) in various degraded modes (single and multiple system failures).

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22	PROJECT NUMBER AND NAME H1425 / V-22
<p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$198.602) Contractor activities: Continue MV-22 development efforts by Bell-Boeing. Rolls-Royce continues to provide engine support and repair of repairables for MV-22 flight testing. Complete MV-22 software development efforts. Continue development in support of "Return to Flight" and MV-22 Block up-grades required to return the MV-22 to fleet operations in FY 03. Continue development of maintenance training equipment. Restart WRA/TPS development. Continue logistics, flight test, and flight test support, address correction of deficiencies, and provide funding for the MV cost overruns. Continue contracted development efforts on aircraft #8 and #10. - (U) (\$104.964) Field activities: Continue in-house field activity support of ITT's and IPT's, logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Continue development in support of "Return to Flight" and MV-22 Block up-grades required to return the MV-22 to fleet operations in FY 03. Continue field development efforts on aircraft #8. Provide R&D support in the areas of R&M data analysis, loads and dynamics, electromagnetic environmental effects, V-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, V-22 avionics, facilities, computer support, structures, communications, Small Business Innovative Research, etc. Continue logistics, flight test, and flight test support, and address correction of deficiencies. - (U) (\$122.819) Continue CV-22 Block-0 EMD development. Provide flight test support for CV-22 aircraft #7 and #9. Provide engineering and maintenance support for CV-22 flight testing. Fund fuel costs for test aircraft and/or engines, and provide funding for CV cost overruns. - (U) (\$16.402) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>4. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$224.200) Contractor activities: Continue MV-22 development efforts by Bell-Boeing. Provide engine support and repair of repairables for MV-22 flight testing. Continue development in support of "Return to Flight" and MV-22 Block up-grades required to return the MV-22 to fleet operations in FY 03. Continue development of maintenance training equipment. Continue contracted development efforts on aircraft #8 and #10, plus three LRIP aircraft. Continue WRA/TPS development. Continue development of the Ground Collision Avoidance System (GCAS). Continue logistics, flight test, and flight test support, and address correction of deficiencies. - (U) (\$78.375) Field activities: Continue in-house field activity support of ITT's and IPT's, logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Continue development in support of "Return to Flight" and MV-22 Block up-grades required to return the MV-22 to fleet operations in FY 03. Continue field development efforts on aircraft #8 and #10, plus three LRIP aircraft. Provide R&D support in the areas of R&M data analysis, loads and dynamics, electromagnetic environmental effects, CV-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, CV-22 avionics, facilities, computer support, structures, communications, Small Business Innovative Research, etc. Continue logistics, flight test, and flight test support, and address correction of deficiencies. - (U) (\$117.534) Continue CV-22 Block-0 EMD development. Provide flight test support for CV-22 aircraft #7 and #9. Provide engineering and maintenance support for CV-22 flight testing. Fund fuel costs for test aircraft and/or engines. - (U) Anticipate approximately \$ 16M carryover from FY02 to continue MV-22 development. 		

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 3 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22	PROJECT NUMBER AND NAME H1425 / V-22						
(U) B. PROGRAM CHANGE SUMMARY:								
	FY2001	FY2002	FY2003					
(U) FY 2002 President's Budget:	146.589	546.713						
(U) Adjustments from the President's Budget:	71.336	-103.926						
(U) FY 2003 President's Budget Submit:	217.925	442.787	420.109					
CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: The FY2001 increase of \$71.336 million reflects an increase of \$80.000 million for the restructuring of the program to meet the Way Forward recommendations of the Blue Ribbon Panel offset by a decrease of \$5.215 million for Small Business Innovative Research Assessment, a decrease of \$.018 million for a Federal Technology Transfer, and a decrease of \$3.431 million for reprioritization of requirements within the Navy. The FY 2002 decrease of \$103.926 million consists of an increase of \$.022 million for economic adjustments, a decrease of \$100.000 million to defer building two SOCOM EMD aircraft per the FY02 Appropriations Bill, and a decrease of \$3.948 million for an undistributed Congressional reduction.</p> <p>(U) Schedule: As a result of the December 11, 2000 mishap, the program office conducted comprehensive external and internal reviews of the program. An independent Blue Ribbon review panel was appointed to conduct this review. This budget reflects the recommended funding changes to correct deficiencies and move forward.</p> <p>(U) Technical:</p>								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
16400 / V-22								
V-22 APN-1	962.962	808.973	1,105.958	1,108.482	1,214.205	1,593.181	2,142.064	
V-22 APN-6 Spares	48.277	75.258	214.042	115.436	32.398	31.149	33.622	
59000 / V-22								
V-22 APN-5	35.000	17.273	4.961	4.944	36.465	19.672	24.533	235.500
Related RDT&E:								
0401318F CV-22	0.000	188.649	11.449	15.926	8.401	4.996	4.990	Cont
1160404BB CV-22	40.224	101.661	62.807	50.843	35.562	0.000	0.000	Cont

R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22	PROJECT NUMBER AND NAME H1425 / V-22																											
<p>(U) D. ACQUISITION STRATEGY: The V-22 program is designed to provide an aircraft to meet the medium lift amphibious/vertical assault needs of the USMC and the special operations needs of the USSOCOM. The aircraft will be capable of operations from aviation and air capable ships, as well as from unimproved landing sites throughout the world. The tiltrotor aircraft combines the speed, range and fuel efficiency normally associated with turboprop aircraft with the vertical take-off/landing and hover capabilities of helicopters. The special operations aircraft (CV-22) will consist of the baseline V-22 aircraft (MV-22) configuration plus a terrain following radar, additional fuel tanks, radios and flare/chaff dispensers, radar jammer and warning receiver, and infrared countermeasures. The CV-22 will be approximately 80% common with the MV-22.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 20%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>1Q Suspension of flight operations</td> <td>TBD Program Reviews</td> <td>TBD</td> <td>TBD MSIII TBD IOC</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>3Q RESUME FLIGHT TEST</td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td>3Q LRIP LOT V AWARD 3Q LRIP LOT VI (LONG LEAD)</td> <td>2Q Definitize Lot V/VI</td> <td></td> <td></td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	1Q Suspension of flight operations	TBD Program Reviews	TBD	TBD MSIII TBD IOC	(U) Engineering Milestones					(U) T&E Milestones		3Q RESUME FLIGHT TEST			(U) Contract Milestones	3Q LRIP LOT V AWARD 3Q LRIP LOT VI (LONG LEAD)	2Q Definitize Lot V/VI		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones	1Q Suspension of flight operations	TBD Program Reviews	TBD	TBD MSIII TBD IOC																									
(U) Engineering Milestones																													
(U) T&E Milestones		3Q RESUME FLIGHT TEST																											
(U) Contract Milestones	3Q LRIP LOT V AWARD 3Q LRIP LOT VI (LONG LEAD)	2Q Definitize Lot V/VI																											

R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604262N / V-22			H1425 / V-22						
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
Prime Contractor - Airframe	SS CPAF	BELL-BOEING, PaxRiver, M	3,370.948	132.620	10/00	311.617	03/02	335.530	10/02	483.875	4,634.590	4,634.590
Award Fee	SS/CPAF	BELL-BOEING, PaxRiver, M	165.347	6.884	10/00	6.826	03/02	4.281	10/02	5.014	188.352	188.352
Prime Contractor - Engine	C/CPIF	ALLISON, INDIANAPOLIS, IN	178.506	3.385	10/00	2.978	04/02	1.923	10/02	5.380	192.172	192.172
Field Activity	WX	NAWCAD PAX RIVER, MD		42.348	10/00	75.435	02/02	59.306	11/02	165.932	343.021	
Field Activity	MIPR	EDWARDS AFB, CA		5.481	10/00	7.640	02/02	4.934	11/02	13.805	31.860	
Field Activity	WX	NAWCAD LAKEHURST, NJ		5.773	10/00	9.711	02/02	6.271	11/02	17.546	39.301	
Field Activity	VARIOUS	VARIOUS	2,861.837	21.434	10/00	12.178	02/02	7.864	11/02	22.003	2,925.316	
SBIR Assessment												
Subtotal Product Development			6,576.638	217.925		426.385		420.109		713.555	8,354.612	
<p>Remarks:</p> <p>Award Fees actually awarded range from 67% to 86%.</p> <p>Target value of Bell-Boeing contract does not include anticipated overrun, ACO orders, or new efforts not already on contract (FY01-07), such as the gun and environmental control system.</p> <p>Breakout of "Cost to Complete" between prime contractor and field activities is an estimate and actual split will depend on negotiated value of future contract modifications, such as the gun and environmental control system.</p> <p>Prior year cost breakout is not available by specific field activity. Field activity prior year costs have been subtotaled and placed in the "various" category.</p>												
NOT												
SEPARATELY												
PRICED												
Subtotal Support												
<p>Remarks:</p>												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604262N / V-22			PROJECT NUMBER AND NAME H1425 / V-22						
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
NOT SEPARATELY PRICED												
Subtotal T&E												
Remarks:												
ASN or HQMC directed studies	various	various	3.467								3.467	
SBIR Assessment						16.402					16.402	
Subtotal Management			3.467			16.402					19.869	
Remarks:												
Total Cost			6,580.105	217.925		442.787		420.109		713.555	8,374.481	
Remarks:												

R-1 SHOPPING LIST - Item No. 105

UNCLASSIFIED

Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 7 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604264N/Aircrew Systems Development					
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			17.904	15.380	6.695	8.679	7.404	2.592	2.703	Continuing	Continuing
W0606 Aircrew Systems Development			17.869	7.649	6.695	8.679	7.404	2.592	2.703	Continuing	Continuing
W2879 Joint Ejection Seat Program			0.035	0.991							1.026
W2877 Joint Helmet Mounted Cueing System				2.478							2.478
W9061 Intensifier Tube Advanced Development				4.262							4.262
Quantity of RDT&E Articles	Not Applicable										
<p>*The FY 2001 Budget reflects a \$3.500M Congressional add for Joint Helmet Mounted Cueing System which was reduced by \$.032 million for Congressional Reductions and \$.102 million for a SBIR assessment and was executed under W0606. The FY 2001 Budget also reflects a \$4.000M Congressional add for Modular Flight Helmet/Adv Visionics Helmet Sys/HAILSS which was reduced by \$.037 million for Congressional Reductions and \$.117 million for a SBIR assessment and was executed under W0606.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Aircrew Systems Development program provides engineering and manufacturing development (EMD) of Aviation Life Support Systems to protect aircrews from current and future threats including: directed energy weapons, chemical/biological/radiological agents/fallout, ballistic projectiles, temperature extremes, heat/fire, low concentration oxygen environments, high dynamic forces during emergency egress, and high "G" forces. The program also provides development for the following capabilities: head protection, in flight restraint and stability emergency egress and descent, escape and evasion, survival and rescue, crash protection, and anthropometric sizing for small aircrew. Acquisition initiatives include: competition, the application of streamlining initiatives, use of non-developmental items (NDI), joint and tri-service developments, and the pursuit of NATO/allied cooperative ventures, which expedite introduction of new products into Navy and Marine Corps fixed and rotary wing aircraft, reduce costs, and promote commonality.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 106

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 22)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604264N/Aircrew Systems Development					W0606/Aircrew Systems Development					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			17.869	7.649	6.695	8.679	7.404	2.592	2.703	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) SUBPROJECTS:

- (U) ESCAPE AND CRASH SAFETY: Naval Aircrew Common Ejection Seat Pre-Planned Product Improvement (NACES P3I), Advanced Crashworthy Aircrew Survival Systems (ACASS), Joint Cockpit Air Bag System (JCABS), Crashworthy Troop Seats (CWTS), Escape System Injury Reduction Program (ESIRP) for aircrew using Helmet Mounted Cueing and small occupants (formerly NON-NACES and Small Occupant Escape System).
- (U) LIFE SUPPORT/THREAT PROTECTION: Extreme Cold Weather Improvement Program/State of the Art Survival Items (ECWIP/SOASI), Personal Protective Apparel (PPA) formerly AMELIA, Aircrew Accommodation Expansion Program (AAEP), Aviation Oxygen Systems (AOS), Aircrew Exposure Protection Systems (AEPS) formerly Aircrew Cooling/Helicopter Advanced Integrated Life Support Systems (HALSS), Liquid Oxygen to ON-Board Oxygen Generating System (LOX to OBOGS), Common Smoke Mask (CSM), Joint Protective Air Crew Ensemble (JPACE), Combat Survivor Evader Locator (CSEL), and Tri-Service Safety Harness (TSSH).
- (U) HELMET, VISION AND DISPLAYS: Night Vision Systems (NVS), Joint Helmet Mounted Cueing System (JHMCS), Integrated Day/Night All Weather Helmet (IDNAWH), Wide Field of View (WFOV) Night Vision Goggle (formerly Panaramic Night Vision Goggle (PNVG), JHMCS Night Attack and Agile Frequency Laser Eye Protection, and Laser Eye Protection Improvement Program (LEPIP)..

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$4.940) NACES P3I: Commenced aircraft (A/C) platform installation. Conducted subsystem demonstration testing (DT) on selected Phase II injury risk reduction candidate technologies and initiated system DT testing. AV8B: Conducted component DT testing and commenced system DT testing. CWTS: Completed H-1 system testing. Continued preliminary design on H-3 and H-46. ESIRP: Conducted preliminary documentation for Request for Proposal (RFP), conducted source selection, and contract award.
- (U) (\$3.610) ECWIP/SOASI: Continued evaluations and authorizations of state of the art survival items. PPA: Selected high performance materials and advanced designs for multi-climate protections system components and completed anti-exposure system accommodation efforts. AAEP: Collected Naval fixed wing non-ejection aircraft cockpit data and released restriction codes. HALSS: Selected validated technology options and commenced full scale DT of selection. LOX TO OBOGS: Continuing risk reduction/acquisition planning for replacement of Liquid Oxygen System with OBOGS for Naval aircraft. CSM: Initiated determination and validated requirements. Continued to prepare to conduct initial product demonstrations of full face containment devices for Naval fixed wing non-ejection aircraft. JPACE: Continued with DT and completion of initial source selection for fabric and garment producers. TSSH: Initiated and validated requirements. Conducted initial product demonstrations.
- (U) (\$9.319) NVS: Continued to monitor and participate in PNVG Advanced Technology Development. JHMCS: Completed F/A-18 E/F DT/OT, LRIP II, reengineer F/A-18 C/D integration, JHMCS P3I: Completed studies. HALSS VISIONICS: Develop Visionics and Helmet Shell, Helmet Demonstration.

R-1 SHOPPING LIST - Item No. 106

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 22)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W0606/Aircrew Systems Development
<p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$2.777) NACES P3I: Continue A/C platform installation and continue Phase II injury risk reduction component and system DT testing. AV-8B: Continue A/C platform installation. CWTS: Incorporate into H-1 A/C OT testing. Continue preliminary design on H-3 and H-46. ESIRP: Purchase long lead DT test hardware and prototype design fabrication. - (U) (\$2.729) ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Initiate DT and Fleet assessment of potential multi-climate protection system components. AAEP: Publish Naval fixed wing non-ejection aircraft accommodation envelopes and commence development of detailed cockpit Computer Aided Drafting (CAD) images. AEPS/HAILSS: Continue full scale DT of demonstrated technology. LOX to OBOGS: Continuing risk reduction/acquisition planning for replacement of Liquid Oxygen System with OBOGS for Naval aircraft. CSM: Conduct initial product demonstrations of full smoke masks and O2 containment devices for Naval fixed wing non-ejection aircraft. CSEL: Conduct testing/logistics planning and development. JPACE: Continue with DT phase and completion of risk reduction testing. TSSH: Commence DT and prepare ECP. - (U) (\$1.911) NVS: Continue to monitor and participate in WFOVNVG (formerly PNVG) testing. JHMCS: F/A-18 E/F OT, MS III. JHMCS: P3I Night Attack Interface Control Design (ICD) Development. JALEPV: DT Assist. IDNAWH: Program Design Review (PDR), - (U) (\$0.232) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$2.685) NACES P3I: Continue system design interface and system demonstration testing (DT) on selected Phase II injury risk reduction candidate technology improvements. AV-8B: Complete A/C platform installation. CWTS: Commence preparation of H-3/H46 platform ECP's. ESIRP: Conduct DT on selected injury risk reduction candidate subsystem technologies. - (U) (\$1.967) ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Finalize designs and complete data packages for potential multi-climate protection system components. AAEP: Continue development of detailed cockpit CAD images and establish updated population anthropometric data collected by Digital Anthropometric Video Imaging Device (DAVID) or whole body scanners. AEPS/HAILSS: Continue full scale DT of demonstrated technology. LOX TO OBOGS: Continuing risk reduction/acquisition planning for the replacement of Liquid Oxygen System with OBOGS for Naval aircraft. CSM: Continue DT of full face smoke masks and O2 containment devices for Naval fixed wing non-ejection aircraft. JPACE: Continue with DT phase and completion of full system testing. TSSH: Complete DT and contracting. - (U) (\$2.043) JHMCS P3I Night Attack: Initiate DT/OT. JALEPV: MS III. LEPID (formerly Laser Spectacle Improvements): Commence DT. IDNAWH: Initiate DT/OT. 		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development			PROJECT NUMBER AND NAME W0606/Aircrew Systems Development			
(U) B. PROGRAM CHANGE SUMMARY:								
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget:	18.329	7.717						
(U) Adjustments from the FY2002 President's Budget:	-0.460	-0.068						
(U) FY 2003 President's Budget Submit:	17.869	7.649	6.695					
CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: The FY 2001 decrease of \$0.460 million consists of a \$0.330 million decrease for a Small Business Innovative Research Assessment, and a \$0.130 million decrease for reprioritization of requirements within the Navy. FY 2002 decrease of \$0.068 million consists of a \$0.070 million decrease for an undistributed congressional reduction and a \$0.002 increase for reprioritization of requirements within the Navy. FY 2003 decrease of \$0.671 million consists of a \$0.500 million decrease for the Elimination of LOX TO OBOGS, a \$0.151 million decrease for reprioritization of requirements within the Navy, a \$0.009 million decrease to reduce projected carryover, a \$0.038 million decrease for economic assumptions and a \$0.027 million increase for economic assumptions.</p> <p>(U) Schedule: FY 01 - IDNAWH will perform a demonstration test and LRIP II and not a PDR/CDR. ECP preparation of CWTS for H-3/H-46 has been delayed from FY 2001 to FY 2003 because of platform attention being shifted to higher priority efforts. NACES II P3I DT testing has been extended to FY 2003 because of attention being shifted to higher competing priority efforts. JHMCS has added a demonstration test to the previous announced operational test. AILSS program has been better defined, and an ECP avoided by being replaced by HAILSS. PPA will address demonstration testing and not ECP's. Tri-Service Safety Harness is a new program start.</p>								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Aviation Life Support - OPN	36.645	30.079	20.741	25.676	28.406	28.606	54.924	27.012
Related RDT&E								
(U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).								
(U) D. ACQUISITION STRATEGY: Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts, Cost as an Independent Variable. Majority of programs non-ACAT programs with no specific acquisition strategies.								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY		PROJECT NUMBER AND NAME		
RDT&E, N /	BA-5	W0606/Aircrew Systems Development		
(U) Program Milestones	<u>FY 2001</u> 2Q/01 AAEP* 4Q/01 NACES II P3I DT 4Q/01 ESIRP CA 3Q/01 JHMCS LRIP II 3Q/01 IDNAWH DEMO	<u>FY 2002</u> 2Q/02 AAEP* 2Q/02 JHMCS MS III 2Q/02 PPA MS B 3Q/01 JHMCS F/A-18 C/D INTEGRATION	<u>FY 2003</u> 2Q/03 AAEP* 2Q/03 CWTS H-3, H-46 DT 3Q/03 NACES II P3I DT 3Q/03 ESIRP DT 2Q/03 JALEPV MS III 1Q/03 JHMCS P3I Program Commence 3Q/03 PPA MS C	<u>TO COMPLETE</u> AAEP TBD CWTS H-3,H-46 (TBD) ESIRP (TBD) 3Q/07 AGILE FREQUENCY LASER PROTECTION TBD
(U) Engineering Milestones	3Q/01 PPA PDR		2Q/03 PPA CDR	
(U) T&E Milestones	4Q/01 ECWIP/SOASI** 2Q/01 HAILSS DT 3Q/01 CWTS H-1 DT 4Q/01 TSSH DT 4Q/01 PPA DT 4Q/01 NACES II P3I DT	4Q/02 ECWIP/SOASI** 2Q/02 AEPS/HAILSS DT 3Q/02 JALEPV DT 4Q/02 TSSH DT 4Q/02 PPA DT 4Q/02 NACES II P3I DT 4Q/02 ESIRP DT	4Q/03 ECWIP/SOASI** 2Q/03 AEPS/HAILSS DT 3Q/03 TSSH DT II/QUAL. 2Q/03 PPA LRIP 3Q/03 NACES II P3I DT 3Q/03 ESIRP DT	ECWIP/SOASI TBD 2Q/04 AEPS/HAILSS OT CWTS H-3/H-46 (TBD) 4Q/06 TSSH LRIP NACES II P3I DT/OT (TBD) ESIRP DT/OT (TBD)
(U) Contract Milestones	1Q/01 JHMCS FA-18 E/F DT/OT	3Q/02 JHMCS P3I NIGHT ATTACK ICD Dev. CDR 2Q/02 PNVG DEMO	2Q/03 JHMCS NIGHT ATTACK DT 4Q/03 IDNAWH DT/OT	JHMCS NIGHT ATTACK DT/OT TBD IDNAWH TBD
		2Q/02 CSM DT 4Q/02 CSEL OT	1Q/03 CSM DT	CSM TBD

* AAEP covers numerous platforms. This denotes milestones reached for various platform(s) during Fiscal Year.

**ECWIP/SOASI covers numerous platforms. This denotes milestones reached for various platform(s) during Fiscal Year.

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Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604264N/AIRCREW SYSTEMS DEVELOPMENT				W0606/AIRCREW SYSTEMS DEVELOPMENT					
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
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	33.552	2.813	Various	2.120	Various	2.957	Various	Continuing	Continuing	
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCWD, CHINA LAKE,CA	1.305	0.950	Various	1.571	Various	0.413	Various	Continuing	Continuing	
Systems Engrg. (Misc. less \$1M)	WX/RX	NSWC, INDIAN HEAD, MD		0.200	Various	0.225	Various	0.137	Various	Continuing	Continuing	
JHMCS Hardware Development	MIPR	WPafb, OH	6.279	6.500	03/01						12.779	
JHMCS Hdw. Dev. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD				0.225	03/02				0.225	
JHMCS Hardware Development	WX/RX	NAWCAD, PAX RIVER, MD		2.870	03/01						2.870	
Subtotal Product Development			41.136	13.333		4.141		3.507		Continuing	Continuing	
Remarks:												
Developmental T&E(Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	25.977	2.898	Various	1.600	Various	1.800	Various	Continuing	Continuing	
Developmental T&E(Misc. less \$1M)	WX/RX	NAWCWD, CHINA LAKE,CA	4.630	0.300	03/01	0.475	02/02	0.138	04/03	Continuing	Continuing	
Developmental T&E(Misc. less \$1M)	WX/RX	NADEP, CHERRY PT. NC	0.221								0.221	
Developmental T&E	WX/RX	NAWCAD, PAX RIVER, MD	5.939								5.939	
Developmental T&E	WX/RX	NAWCWD, CHINA LAKE,CA	2.424								2.424	
Operational T&E (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	4.933								4.933	
Subtotal Support			44.124	3.198		2.075		1.938		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W0606/AIRCREW SYSTEMS DEVELOPMENT						
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
Integrated Log.Supt. (Misc.less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	15.256	0.799	Various	0.730	Various	0.750	Various		17.535	
Subtotal T&E			15.256	0.799		0.730		0.750			17.535	
Remarks:												
MISC (LESS THAN \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	5.819	0.539	Various	0.471	Various	0.500	Various	Continuing	Continuing	
SBIR ASSESSMENT						0.232					0.232	
Subtotal Management			5.819	0.539		0.703		0.500		Continuing	Continuing	
Remarks:												
Total Cost			106.335	17.869		7.649		6.695		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604264N/Aircrew Systems Development					W2879/Joint Ejection Seat Program/SIIS Ejection System					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			0.035	0.991							1.026
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p style="padding-left: 40px;">(U) SUBPROJECTS- ESCAPE AND CRASH SAFETY:</p> <p style="padding-left: 40px;">(U) JOINT EJECTION SEAT PROGRAM (JESP): Congressional intent is that this program would lead to the development of fully qualifies seats that can be competed for installation in the Joint Strike fighter and other current and future aircraft.</p> <p style="padding-left: 40px;">(U) SIIS EJECTION SYSTEM: The FY2002 funding is needed to improve ejection seat performance, increase crashworthy protection, and reduce risk of injury to ejecting aircrew. This improvement is needed due to the introduction of newer technologies to enhance war fighting capabilities through the use additional aircrew attached information systems (i.e. Helmet Mounted Displays), and more man-mounted equipment. This effort will help mitigate the increased physiological loading imparted to the aircrew as a result of these newer technologies, and still maintain current risk of injury envelope and protection. Funds will be used to reduce physiological loads by developing modular devices that can be used to improve stability and restraint of the SIIS ejection seat.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. FY 2001 ACCOMPLISHMENTS: <ul style="list-style-type: none"> - (U) (\$0.035) JESP: Phase I - Completed trade-off studies on the Joint Ejection Seat Program (JESP). 2. FY 2002 PLANS: <ul style="list-style-type: none"> - (U) (\$0.991) SIIS: FY-02 funds are for the SIIS Ejection System and is not related to the Joint Ejection Seat Program (JESP). These funds were placed into Project Unit W2879 for accounting and budget tracking purposes only. FY 02 SIIS Ejection System efforts are for stability and restraint improvements to reduce aircrew physiological loading that occur during ejections with the introduction of newer aircrew helmet and man-mounted technologies. Initiate design fabrication and commence early component DT. 3. FY 2003 PLANS: Not Applicable 											

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EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROJECT NUMBER AND NAME W2879/Joint Ejection Seat Program/SIIS Ejection System			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones	3Q/01 JESP Completed trade studies			
(U) Engineering Milestones				
(U) T&E Milestones	4Q/01 JESP Phase I (Risk Reduction Tests)	4Q/02 SIIS DT	3Q/03 SIIS DT	
(U) Contract Milestones		3Q/02 SIIS CA		

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Exhibit R-2, RDTE Budget Item Justification
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Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W2879/Joint Ejection Seat Program/SIIS Ejection System					
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
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCWD, CHINA LAKE, CA		0.035	Various						0.035	
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD				0.991	Various				0.991	
Subtotal Product Development			0.000	0.035		0.991		0.000			1.026	
Remarks:												
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W2879/Joint Ejection Seat Program/SIIS Ejection System						
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
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Subtotal Management			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Total Cost			0.000	0.035		0.991		0.000			1.026	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development				PROJECT NUMBER AND NAME W2877/Joint Helmet Mounted Cueing System					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				2.478							2.478
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

- (U) JOINT HELMET MOUNTED CUEING SYSTEM (JHMCS). JHMCS currently has the capability to cue and verify cueing of high off-axis sensors and weapons in the air-to-ground and air-to-air arena (TFLIR and AIM-9X). To take advantage and enhance the war fighting capability at night the program is integrating night vision capabilities into the JHMCS. This will increase the pilot's situational awareness through all phases of flight. Many friendly and threat aircraft already employ helmet mounted systems. In order to maintain U.S. aerospace control and superiority as addressed in the U.S.N. "From The Sea" and U.S.A.F. "Global Reach, Global Power" the continuing development of JHMCS is needed to meet Counter Air mission needs.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: Not Applicable
2. FY 2002 PLANS:
 - (U) (\$2.478) JHMCS: Commence F/A-18 C/D Design. Commence DT Testing.
3. FY 2003 PLANS: Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W2877/Joint Helmet Mounted Cueing System																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center; border-bottom: 1px solid black;">FY2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2002</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2003</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">(U) FY 2002 President's Budget:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">2.478</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">2.478</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p style="padding-left: 40px;">(U) Funding: The FY 2002 increase of \$2.478 consists of \$2.500 million for JHMCS and \$0.022 million decrease for an undistributed congressional reduction.</p> <p style="padding-left: 40px;">(U) Schedule: JHMCS: 3Q/02 DT Testing and 4Q/02 OT Testing.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: TBD</p> <p>Related RDT&E (U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).</p> <p>(U) D. ACQUISITION STRATEGY: Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts, Cost as an Independent Variable. There is no requirement for Milestone Reviews or a Milestone Decision Authority. The qualification program will require execution oversight and a management structure consistent with an ACAT III program.</p>				FY2001	FY2002	FY2003	(U) FY 2002 President's Budget:	0.000	0.000		(U) Adjustments from the FY2002 President's Budget:	0.000	2.478		(U) FY 2003 President's Budget Submit:	0.000	2.478	0.000
	FY2001	FY2002	FY2003															
(U) FY 2002 President's Budget:	0.000	0.000																
(U) Adjustments from the FY2002 President's Budget:	0.000	2.478																
(U) FY 2003 President's Budget Submit:	0.000	2.478	0.000															

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EXHIBIT R-2a, RDT&E Project Justification			DATE: FEBRUARY 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROJECT NUMBER AND NAME W2877/Joint Helmet Mounted Cueing System		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones				
(U) Engineering Milestones		2Q/02 CDR		
(U) T&E Milestones		3Q/02 DT 4Q/02 OT		
(U) Contract Milestones				

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 15 of 22)

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Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604264N/AIRCREW SYSTEMS DEVELOPMENT			W2877/Joint Helmet Mounted Cueing System						
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
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD				0.300	Various				0.300	
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCWD,CHLKE, CA				0.200	Various				0.200	
Subtotal Product Development			0.000	0.000		0.500		0.000		0.000	0.500	
Remarks:												
Developmental T&E	MIPR	WPAFB, OH				1.978	12/02				10.000	
Subtotal Support			0.000	0.000		1.978		0.000		0.000	1.978	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W2877/Joint Helmet Mounted Cueing System						
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
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		2.478		0.000		0.000	2.478	
Remarks:												

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Exhibit R-2, RD TEN Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development				PROJECT NUMBER AND NAME W9061/Intensifier Tube Advanced Development					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				4.262							4.262
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) INTENSIFIER TUBE ADVANCED DEVELOPMENT: The funding is needed to develop and integrate smaller and lighter night vision intensifier tubes (16mm) for wide field of view night vision systems. The advanced intensifier tubes will be the foundation for wide field of view night vision devices that can be integrated with the Joint Helmet Mounted Cueing System (JHMCS) and the AH-1Z helmet mounted display system to provide a night vision cueing capability. This capability is necessary for rapid targeting of air-to-air missiles and air-to-ground weapons at night. Funding for the development of enhanced wide field of view night vision imaging systems and the incorporation of this capability in current and future helmet mounted cueing systems will extend current daytime only technology for night use.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: Not Applicable

2. FY 2002 PLANS:

(U) (\$4.262): Commence trade studies through ITT, Roanoke, VA and Litton Electro-Optics Systems, TX. Perform initial development of the advanced intensifier tubes. This will be the foundation for wide field of view night vision devices that can be integrated with the Joint Helmet Mounted Cueing System (JHMCS) and the AH-1Z helmet mounted display system to provide a night vision cueing capability. Currently, JHMCS has cueing capability during day operations only.

3. FY 2003 PLANS: Not Applicable

R-1 SHOPPING LIST - Item No. 106

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W9061/Intensifier Tube Advanced Development																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">(U) FY 2002 President's Budget:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">4.262</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) FY 2003 OSD/OMB Budget Submit:</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">4.262</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p style="padding-left: 40px;">(U) Funding: The FY 2002 increase of \$4.262 million consists of a \$4.300 million increase for Intensifier Tube Advanced Development and a \$0.038 million decrease for an undistributed congressional reduction.</p> <p style="padding-left: 40px;">(U) Schedule: 2Q/02 RFP AND 4Q/02 PDR.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: TBD</p> <p>Related RDT&E (U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).</p> <p>(U) D. ACQUISITION STRATEGY: Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts, Cost as an Independent Variable. There is no requirement for Milestone Reviews or a Milestone Decision Authority. The qualification program will require execution oversight and a management structure consistent with an ACAT III program.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	0.000	0.000		(U) Adjustments from the FY2002 President's Budget:	0.000	4.262		(U) FY 2003 OSD/OMB Budget Submit:	0.000	4.262	0.000
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:	0.000	0.000																
(U) Adjustments from the FY2002 President's Budget:	0.000	4.262																
(U) FY 2003 OSD/OMB Budget Submit:	0.000	4.262	0.000															

R-1 SHOPPING LIST - Item No. 106

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: FEBRUARY 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROJECT NUMBER AND NAME W9061/Intensifier Tube Advanced Development		
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones				
(U) Engineering Milestones		2Q/02 SRR 4Q/02 PDR		
(U) T&E Milestones				
(U) Contract Milestones		2Q/02 RFP		

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 20 of 22)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W9061/Intensifier Tube Advanced Development						
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
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD				0.300	Various				0.300	
Subtotal Product Development			0.000	0.000		0.300		0.000		0.000	0.300	
Remarks:												
Developmental T&E	MIPR	WPAFB, OH				3.962	05/02				3.962	
Subtotal Support			0.000	0.000		3.962		0.000		0.000	3.962	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT			PROJECT NUMBER AND NAME W9061/Intensifier Tube Advanced Development						
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
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		4.262		0.000		0.000	4.262	
Remarks:												

R-1 SHOPPING LIST - Item No. 106

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 22 of 22)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604270N Electronic Warfare Development					
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			130.004	117.723	74.742	58.600	141.679	327.190	680.692	Continuing	Continuing
E0556 EW Counter Response			88.075	87.837	66.907	40.693	39.380	36.723	37.387	Continuing	Continuing
E2175 Tactical Air Electronic Warfare	393.066		36.565	25.408	5.758	5.929					466.726
E2635 Integrated Defensive Electronic C			2.972	2.478							5.450
E3063 AEA Follow On						9.880	100.164	288.309	641.125	Continuing	Continuing
R2260 Specific Emitter Identification			1.482	1.003	1.019	1.017	1.016	1.015	1.014	Continuing	Continuing
Z1742 EW Technical Development and Testing	1.687		0.910	0.997	1.058	1.081	1.119	1.143	1.166	1.166	10.327
Quantity of RDT&E Articles	460		2	10							472
<p>*FY2001 budget reflects a \$23,000K Congressional add for Link-16 executed under E2781 which has been reduced by \$570K for Congressional Undistributed Adjustments; a \$8,500K Congressional add for Spraycool technology executed under E2782 which has been reduced by \$311K for Congressional Undistributed Reductions; and a \$3,000K Congressional add for LOCO GPSI executed under E2422 which has been reduced by \$111K for Congressional Undistributed Adjustments.</p> <p>**FY2002 budget reflects a \$3.800K Congressional add for LOCO GPSI that will be executed under E2422. Additionally, \$5.000 million will be used to fund AEA efforts in accordance with FY 2002 Congressional language.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This element includes development of electronic warfare systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army (USA) tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USMC communications and non-communications jammers, and development and testing of electronic warfare devices for emergency contingencies.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to full rate production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E0556 EW Counter Response					
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		88.075	87.837	66.907	40.693	39.380	36.723	37.387	Continuing	Continuing	
RDT&E Articles Qty			10							10	
<p>*FY2001 budget reflects a \$23,000K Congressional add for Link-16 executed under E2781 which has been reduced by \$570K for Congressional Undistributed Adjustments; a \$8,500K Congressional add for Spraycool technology executed under E2782 which has been reduced by \$311K for Congressional Undistributed Reductions; and a \$3,000K Congressional add for Loco GPSI executed under E2422 which has been reduced by \$111K for Congressional Undistributed Adjustments.</p> <p>**FY2002 budget reflects a \$3.800K Congressional add for LOCO GPSI that will be executed under E2422. Additionally, \$5.000 million will be used to fund AEA efforts in accordance with FY 2002 Congressional language.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The EA-6B weapon system is designed for jamming and destruction of enemy landbased, shipborne and airborne command, control and communications (C3), and radars associated with early warning, target acquisition surveillance, anti-aircraft artillery, air-to-surface, surface-to-surface, and surface-to-air missiles. In this capacity, it will support carrier based tactical aircraft, battle group operations, and joint forces, in dense radar controlled environments. The efforts under this program element (PE) provide for the electronic countermeasures response to these advanced threat weapon systems and C3 networks which are expanding in density and technical complexity. This PE funds the continuing development and integration of all EW systems for the EA-6B electronic support aircraft. The test articles being funded are; two EA-6B aircraft modified to support the Improved Capability (ICAP) III program and eight Low Band Transmitter (LBT) Engineering Development Models (EDMs). The two EA-6B aircraft modified to the ICAP III configuration are for the Engineering and Manufacturing Development (E&MD) phase of the program, (one validation and one verification aircraft will deliver in FY 2002). These aircraft will be used as test articles during government test and evaluation (TECHEVAL/OPEVAL). The LBT EDMs are broken out as three LBT Antenna Set EDMs and five Amplifier Set EDMs. All Amplifier Set EDM and Antenna Set EDMs will be delivered in FY 2002. The ALQ-99 LBT Antenna Group will provide an expanded war fighting capability against the early warning/acquisition radars and communication links of modern integrated air defense systems. The LBT entered E&MD in September 1996, followed by Low Rate Initial Production (LRIP) anticipated in 1st quarter FY 2004 and Full Rate Production (FRP) approval (Milestone III) anticipated in 1st quarter FY 2005. This effort includes the conversion of the Tactical EA-6B Mission System (TEAMS) software to the Joint Mission Planning System (JMPS), including development of the EA-6B Unique Planning Module.</p> <p>A requirement exists to conduct an Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft, the replacement to the EA-6B. Transition to this weapon system, known as the AEA follow-on, will commence in 2010 and will coincide with the planned retirement of the EA-6B after the year 2015. In light of this, OSD directed the Navy, with Army and Air Force participation and coordination, to prepare an AoA for airborne electronic attack platforms and methods for use over the next two decades.</p> <p>A requirement exists to allow the EA-6B to participate in Network Centric Warfare. A method of implementing this requirement is to include the EA-6B on the Link-16 Network. Link-16 will allow the EA-6B to receive and send critical situational awareness and tactical data with other aircraft and the battle group.</p> <p>A requirement exists to demonstrate and develop Spray Cool Technology in the EA-6B aircraft. FY 2000 and FY 2001 Congressional Adds were provided for this purpose.</p>											

R-1 SHOPPING LIST - Item No. 107

**Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 24)**

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CLASSIFICATION:		
EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:		
1. FY 2001 ACCOMPLISHMENTS:		
<ul style="list-style-type: none">- (U) (8.032) Continued software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program.- (U) (37.573) Continued development of ICAP III system. Specifically, completed development of EDM units, performed laboratory and flight testing, continued systems design, development and fabrication, and modified two development aircraft with new tactical jamming and display equipment.- (U) (3.962) Continued engineering, manufacturing development, and testing of LBT.- (U) (3.000) Continued Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft replacement for the EA-6B.- (U) (8.189) Continued demonstration and development of Spray Cool Technology in the EA-6B aircraft.- (U) (2.889) Continued development of a prototype for the GPS Anti-Jamming System (LOCO GPS). Systems developed by SPAWAR.- (U) (22.430) Completed full requirements definition and continued to develop EA-6B Link-16 capability.- (U) (2.000) Initiated Fiber Optic Network development into EA-6B.		
2. FY 2002 PLANS:		
<ul style="list-style-type: none">- (U) (7.770) Continue software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program.- (U) (53.729) Continue development of ICAP III system. Specifically, FY02 efforts will concentrate on completion of software development, Developmental and Operational Assessment, and final integration of the hardware and software into the aircraft.- (U) (5.395) Continue engineering and manufacturing development, and contractor testing of LBT. Deliver all EDMs. Begin Navy developmental testing (TECHEVAL).- (U) (2.951) Complete the Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft replacement for the EA-6B.- (U) (6.647) Continue to develop Link-16 capability. Commence systems integration of Link-16. Anticipate carryover of approximately \$3.000 million into FY03.- (U) (2.545) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.- (U) (3.800) Continue the design and test candidate platform applications for the GPS Anti-Jamming System (LOCO GPS). Systems developed by SPAWAR.- (U) (5.000) Initiate AEA efforts in accordance with FY 2002 Congressional language.		

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 3 of 24)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	February 2002
PROJECT NUMBER AND NAME E0556 EW Counter Response		
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: Continued</p> <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (9.926) Continue software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program.- (U) (40.144) Continue development of ICAP III system. Specifically, FY-2003 efforts will concentrate on completion of the Operational Assessment (OA), developmental testing (TECHEVAL) and the start of Operational Testing (OPEVAL). LRIP contract will be executed. Continue the baseline ICAP III software update.- (U) (1.737) Continue developmental testing (TECHEVAL). Conduct Operational Assessment (OA) and Operational Test (OPEVAL) of LBT.- (U) (10.000) Commence research and development of miniaturized ICAP III components for use in tactical aircraft or other systems identified by the AOA/AEA.- (U) (3.100) Continue updating the baseline ICAP III system to include integration of avionics items which include the second Embedded GPS/INS (EGI), HARM VI, Low Band Transmitter, Band 7/8, Night Vision Devices (NVDs) and data fusion with national assets. In conjunction with this commence developing dual purpose (ICAP III and AEA) enabling technologies that will reduce risk to, and support transitions to a follow-on system as addressed in the Analysis of Alternatives (AOA) for the Airborne Electronic Attack (AEA).- (U) (2.000) Begin transition of the Tactical EA-6B Mission System (TEAMS) software to the Joint Mission Planning Systems (JMPS).- (U) (*) Anticipate approximately \$3.000 million carryover from FY02 to continue Link-16 systems integration.		

R-1 SHOPPING LIST - Item No. 107

**Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 4 of 24)**

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">89.081</td> <td style="text-align: center;">84.804</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: center;">-1.006</td> <td style="text-align: center;">3.033</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">88.075</td> <td style="text-align: center;">87.837</td> <td style="text-align: center;">66.907</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding:</p> <p style="margin-left: 40px;">The FY 2001 net decrease of \$1.006 million reflects a decrease of \$1.968 million for a Small Business Innovative Research (SBIR) assessment and a decrease of \$1.683 million for a reprioritization of requirements within the Navy offset by an increase of \$1.891 million for the EA-6B Prowler Wave Division Fiber Optic Network Chief Technology Officer (CTO) initiative BTR and an increase of \$.754 thousand for ICAP III.</p> <p style="margin-left: 40px;">The FY 2002 net increase of \$3.033 million reflects an increase of \$3.800 million for LOCO GPSI and a decrease of \$.767 thousand for an undistributed congressional reduction.</p> <p>(U) Schedule:</p> <p style="margin-left: 40px;">Start of Low Band Tx DT moved from 1Q/02 to 2Q/02. Schedule adjusted based on current program schedule for Navy Antenna pattern testing.</p> <p>(U) Technical: Not Applicable</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	89.081	84.804		(U) Adjustments from the FY2002 President's Budget:	-1.006	3.033		(U) FY 2003 President's Budget Submit:	88.075	87.837	66.907
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:	89.081	84.804																
(U) Adjustments from the FY2002 President's Budget:	-1.006	3.033																
(U) FY 2003 President's Budget Submit:	88.075	87.837	66.907															

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E0556 EW Counter Response																					
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007</th> <th style="text-align: right;">To Complete</th> </tr> </thead> <tbody> <tr> <td>P-1 #23 EA-6 Series Modifications</td> <td style="text-align: right;">184.425</td> <td style="text-align: right;">149.677</td> <td style="text-align: right;">223.527</td> <td style="text-align: right;">242.793</td> <td style="text-align: right;">209.203</td> <td style="text-align: right;">195.651</td> <td style="text-align: right;">192.856</td> <td style="text-align: right;">586.9</td> </tr> </tbody> </table> <p>(U) D. ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> - The LBT development contract occurred following a full and open competition and was awarded to BAE Systems (formerly MARCONI). Following development and successful DT/OA, sole source LRIP contracts will be awarded. Following successful OT, a sole source production contract will be awarded. - The ICAP III contract, an E&MD CPIF/AF basic contract with two Fixed Price Incentive (FPI) production options, was awarded to a Northrop Grumman team in March 1998 following Milestone II and a full and open competition. The contract was changed to a CPAF contract in FY 1999. LRIP is scheduled for FY 2003. Milestone III and Full Rate Production are scheduled for FY 2004 with Initial Operating Capability to follow in FY 2005. 									<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	P-1 #23 EA-6 Series Modifications	184.425	149.677	223.527	242.793	209.203	195.651	192.856	586.9
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete																		
P-1 #23 EA-6 Series Modifications	184.425	149.677	223.527	242.793	209.203	195.651	192.856	586.9																		

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 6 of 24)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response		
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones			2Q ICAP III LRIP	1Q/04 Low Band Tx LRIP 1Q/05 Low Band Tx Milestone III 2Q/04 ICAP III Milestone III 2Q/05 ICAP III IOC
(U) Engineering Milestones				
(U) T&E Milestones		2Q to 4Q ICAP III DT	1Q to 4Q ICAP III OA/TECHEVAL and OPEVAL (start)	1Q/05 Complete OPEVAL
		2Q to 4Q Low Band Tx DT	1Q to 4Q Low Band Tx DT/OA/OT	
(U) Contract Milestones			2Q ICAP III LRIP	1Q/04 Low Band Tx LRIP 1Q/05 Low Band TX FRP 2Q/04 ICAP III FRP

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**Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 7 of 24)**

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N Electronic Warfare Development			E0556 EW Counter Response						
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
Primary Hardware Development	FPI	BAE Systems Lansdale, PA	24.210	3.962	10/00	3.395	10/01	0.737	10/02		32.304	32.304
Primary Hardware Development	C/CPAF	Northrop Grumman, Bethpage, NY	131.352	33.481	11/00	32.599	11/01	34.240	11/02	2.500	234.172	234.172
Systems Engineering	WX	NRL, Wash. DC	6.856	0.751	10/00	0.934	10/01	0.510	10/02	Continuing	Continuing	
Systems Engineering	WX	NADEP, JAX	3.919	0.628	10/00	0.680	10/01	0.200	10/02	Continuing	Continuing	
Systems Engineering	WX	NSWC, CRANE	6.810	0.459	10/00	0.700	10/01	0.600	10/02	Continuing	Continuing	
Systems Engineering	WX	NAWCAD, PAX	10.419	2.633	10/00	2.200	10/01	3.272	10/02	Continuing	Continuing	
Systems Engineering	WX	NAWCAD, LKE	2.048	0.406	10/00	0.350	10/01	0.150	10/02	Continuing	Continuing	
Systems Engineering	WX	NAWCWD, PT MUGU	15.059	6.021	10/00	6.200	10/01	6.000	10/02	Continuing	Continuing	
Systems Engineering	Various	VARIOUS	43.063	1.573	11/00	1.200	11/01	1.180	10/02	Continuing	Continuing	
Award Fees	C/CPAF	Northrop Grumman, Bethpage, NY	2.474	1.163	05/01	8.000	05/02	4.500	05/03		16.137	16.137
Miniaturization of ICAPIII Components	TBD	Various						3.600	12/02	28.341	31.941	31.941
H/W Dev Enabling Tech	TBD	Various				2.636	02/02	3.100	02/03	33.458	39.194	39.194
Mission Planning System Development	TBD	TBD						2.000	12/02	4.000	6.000	6.000
LOCO GPSI (E2422)	TBD	SPAWAR	5.897	2.889	06/01	3.800	06/02				12.586	
EA-6B Connectivity/Link 16	CPFF	Northrop Grumman	29.230	19.920	05/01	6.647	01/02				55.797	56.631
ICAP III Spray Cool Technology	CPFF	Isothermal Systems Research	4.872	8.189	06/01						13.061	13.061
AEA Studies and AoA	Various	Various	9.743	3.000	11/00	6.951	11/00				19.694	
Subtotal Product Development			295.952	85.075		76.292		60.089		Continuing	Continuing	

Remarks: 1. The total cost figure for the BAES and the Northrop Grumman contracts are the Independent Government Estimate figures for total contract efforts less award fees, which are listed separately. The target value of contract figures are the total estimated cost of the awarded contracts less the award fees.

2. The Northrop Grumman ICAP III EMD contract award fee paid in FY 01 was \$.870M or 70% of the award fee pool.

3. Anticipate FY02 Link-16 carryover into FY03 of approximately \$3.000 million.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N Electronic Warfare Development			E0556 EW Counter Response						
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
Development Support	SS/FP	JHU/APL, Colombia, MD	3.353	2.000	01/01	2.000	01/02	1.818	01/03		9.171	9.171
Development Support	Various	MISC	12.009								12.009	
SBIR Assessment						2.545					2.545	
Subtotal Support			15.362	2.000		4.545		1.818			23.725	
<p>Remarks: JHU/APL effort is expected to continue for the service life of the aircraft in support of the Jammer and Techniques Optimization (JATO) program.</p>												
Developmental Testing - ICAP III	WX	NAWCAD, Pax		0.500	11/00	2.500	12/01	0.750	11/02	Continuing	Continuing	
Operational Test & Evaluation - ICAP II	WX	OPTEVFOR, Norfolk, VA	2.146	0.500	11/00	2.500	12/01	3.250	11/02	Continuing	Continuing	
Developmental Testing - LBT	WX	NAWCAD, Pax				2.000	12/01				2.000	
Operational Test & Evaluation - LBT	WX	OPTEVFOR, Norfolk, VA						1.000	11/02		1.000	
Operational Test & Evaluation - Link-16	WX	OPTEVFOR, Norfolk, VA										
Subtotal T&E			2.146	1.000		7.000		5.000		Continuing	Continuing	
<p>Remarks: Funding is required to conduct ICAP III and LBT developmental/operational assessment planning, execution, and reporting.</p>												
Total Cost			313.460	88.075		87.837		66.907		Continuing	Continuing	
<p>Remarks: No Management Costs</p>												

R-1 SHOPPING LIST - Item No. 107

UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 9 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development					PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	393.066		39.537	27.886	5.758	5.929					472.176
RDT&E Articles Qty	460		2								462
<p>*The FY 2001 budget consists of \$36,565K for project E2175 and a \$3,000K Congressional add for Integrated Defensive Electronic Countermeasures (IDECM) executed under project E2635; which, has been revised by \$28K for Congressional Undistributed Adjustments. The FY 2002 budget consists of \$25,408K for project E2175 and a \$2,500K Congressional add for IDECM, project E2635 which has been revised by \$22K for Congressional Undistributed Adjustments.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: INTEGRATED DEFENSIVE ELECTRONIC COUNTERMEASURES (IDECM): This joint service subproject develops the new techniques generator and fiber optic towed decoy of the Radio Frequency Countermeasures (RFCM) Subsystem as well as the Navy-unique portions of the Common Missile Warning System (CMWS) and Advanced Strategic and Tactical Expendables (ASTE). It also integrates RFCM, CMWS and ASTE with Radar Warning Receiver (RWR), Countermeasures Dispensing Set (CMDS) and associated cockpit controls and displays to provide the lead aircraft (F/A-18E/F) with increased survivability against Infrared/Radio Frequency (IR/RF) threats. Note: As of FY 2001, CMWS is no longer funded under project E2175.</p> <p>(U) AN/ALR-67(V)3&4 RADAR WARNING RECEIVER: This subproject developed the system which provides enhanced situational awareness by providing accurate azimuth display of all programmed threats, independent of aircraft attitude. This also acted as Electronic Warfare (EW) Bus Controller.</p> <p>(U) AN/ALE-50 ADVANCED AIRBORNE EXPENDABLE DECOY (AAED): This Joint Service (with Air Force) subproject is developing the system which will decoy enemy radio frequency homing missiles away from friendly aircraft.</p> <p>(U) FLEET ELECTRONIC WARFARE SUPPORT GROUP (FEWSG): This subproject developed new EW equipment and technology which is used to provide realistic hostile EW threat environment, and support the evaluation and development of tactics and training.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (\$18.794) IDECM: Continued funding engineering and manufacturing (E&MD) contract for IDECM RFCM subsystem. Included the \$3.0M (Project E2635) Congressional add. (U) (\$ 2.318) IDECM: Continued A-Kit design efforts for integration of the RFCM subsystem into the F/A-18E/F. (U) (\$18.425) IDECM: Continued engineering, technical and logistic support. Started development testing of system. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> (U) (\$7.855) IDECM: Complete funding of engineering and manufacturing (E&MD) contract for IDECM RFCM subsystem. (U) (\$2.500) IDECM: Continue A-Kit efforts for integration of the RFCM subsystem into the F/A-18 E/F. (U) (\$16.762) IDECM: Continue engineering, technical and logistic support and complete testing of the on-board portion including OPEVAL. (U) (\$.769) Portion of extramural program reserved for Small Business Innovative Research assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> (U) (\$1.795) IDECM: Support start of IDECM Block (BLK) 3 DT testing. (U) (\$.500) IDECM: Complete A-Kit integration of the RFCM subsystem into F/A-18 E/F. (U) (\$3.463) IDECM: Continue engineering, technical and logistic support. 											

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 10 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2002																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N ELECTRONIC WARFARE DEVELOPMENT	PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM																																															
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: right;">41.869</td> <td style="text-align: right;">25.630</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: right;">(2.332)</td> <td style="text-align: right;">2.256</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: right;">39.537</td> <td style="text-align: right;">27.886</td> <td style="text-align: right;">5.758</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 decrease of \$2.332 million reflects a decrease of \$1.197 million for reprioritization of requirements within the Navy and a decrease of \$1.135 million for a Small Business Innovative Research assessment. FY 2002 net increase of \$2.256 million reflects a \$2.500 million Congressional Add for IDECM and an increase of \$.005 million for integration and test efforts of RFCM offset by a decrease of \$.249 million for Undistributed Congressional reduction.</p> <p>(U) Schedule: Restructure of the test schedule into phases and production Milestones into on-board and off-board blocks is driven by test schedule changes, aircraft availability, F/A-18E/F priorities, maturity of the decoy and funding availability. IDECM DT-IID and OT-IIA in 1Q/01 and 4Q-01 have changed to IDECM Block 2 DT-IID/OT-IIA Phase 1, 1Q01-2Q/02, OT-IIA Phase 2 in 3Q/02 and IDECM Block 3 DT-IIE/OT-IIB Phase 1 to follow. The RFCM MSIII has been changed to Block 2 FRP and has been moved to the right.</p> <p>(U) Technical: Not applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">To Complete</th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>APN Line 46-IDECM</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">7.7</td> <td style="text-align: center;">20.7</td> <td style="text-align: center;">37.5</td> <td style="text-align: center;">50.8</td> <td style="text-align: center;">41.4</td> <td style="text-align: center;">558.1</td> <td style="text-align: center;">716.3</td> </tr> <tr> <td>Related RDT&E:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:	41.869	25.630		(U) Adjustments from the FY2002 President's Budget:	(2.332)	2.256		(U) FY 2003 President's Budget Submit:	39.537	27.886	5.758	<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	APN Line 46-IDECM	0	0	7.7	20.7	37.5	50.8	41.4	558.1	716.3	Related RDT&E:									
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>																																														
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<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																																								
APN Line 46-IDECM	0	0	7.7	20.7	37.5	50.8	41.4	558.1	716.3																																								
Related RDT&E:																																																	

R-1 SHOPPING LIST - Item No. 107

**Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 11 of 24)**

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	E2175 TACAIR EW & E2635 IDECM		
<p>(U) D. ACQUISITION STRATEGY: IDECM- Sole source LRIP I contract (FY01), LRIP II onboard contract (FY02), sole source onboard FRP (FY03) with one option contract (FY04); sole source offboard FRP with one option (FY05); full and open competition. FRP contract with options (FY06 and beyond). Changes due to program production funding reductions, FY01 through FY04. NPDM, 2Q/02</p>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones	2Q/01 RFCM LRIP I	1Q/02 RFCM LRIP II	1Q/03 IDECM BLK 2 FRP	1Q/05 IDECM BLK 3 FRP
(U) Engineering Milestones				
(U) T&E Milestones	1Q/01-2Q/02 IDECM BLK 2 DT-IID/OT-IIA Phase 1	3Q/02 IDECM BLK 2 OT-IIA Phase 2 OPEVAL	1Q/03 IDECM BLK 3 DT-IIE/OT- IIB Phase 1	1Q/04 IDECM BLK 3 OT-IIB Phase 2 IDECM OPEVAL
(U) Contract Milestones				

R-1 SHOPPING LIST - Item No. 107

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**Exhibit R-2, RDTEEN Budget Item Justification
(Exhibit R-2, page 12 of 24)**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N ELECTRONIC WARFARE DEVELOPMENT			E2175 TACAIR EW & E2635 IDECM						
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
Ancillary Hardware Develop (IMPLC)	SS/CPFF	RAYTHEON/ GOLETA, CA	26.742	1.320	11/00	0.250	11/01	0.200	11/02	0.200	28.712	28.712
Software Development (IDECM)	SS/CPFF	RAYTHEON/CA EL SEGUNDO	4.873	0.482	11/00	0.300	11/01	0.200	11/02	0.200	6.055	6.055
Primary Hardware Develop (IDECM)	*C-CPIF	BAE/NH	131.549	17.450	11/00	7.500	11/01	1.000	11/02	1.000	158.499	222.000
Software Development (IDECM)	SS/CPFF	LITTON/CA	4.336								4.336	4.336
Aircraft Platform Integration (IDECM)	SS/FFP	BOEING, MO	59.691	5.418	12/00	2.500	12/01	0.500	12/02	0.499	68.608	68.608
Government Engineering Support	WX/RX	CHINA LAKE/CA	49.623	6.000	12/00	3.136	12/01			1.500	60.259	
Miscellaneous (efforts < \$1M each)	WX/RX	VARIOUS	45.121	0.435	12/00	0.384	12/01	0.190	12/02	2.530	48.660	
Subtotal Product Development			321.935	31.105		14.070		2.090		5.929	375.129	
<p>*Remarks: BAE (IDECM) target contract value includes Air Force funding and contractor investments. Navy portion of BAE (IDECM RFCM) contract is only \$158.5M. The difference between the target value of contract (BAE) and total cost above reflects the Air Force portion of the contract.</p>												

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 13 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N Electronic Warfare Development			E2175 TACAIR EW & E2635 IDECM						
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
ENGINEERING/LOGISTIC/SPT	WX/RX	NAWC-AD/PAX	22.001	0.768	11/00	2.278	11/01	1.332	11/02		26.379	
ENGINEERINGTECH DATA	WX/RX	NAWC-WD, CA	21.334	5.895	11/00	9.223	11/01	1.429	11/02		37.881	
Miscellaneous (efforts < \$m each)	WX/RX	Various	0.860	0.595	11/00	0.153	11/01	0.061	11/02		1.669	
Subtotal T&E			44.195	7.258		11.654		2.822			65.929	
Remarks:												
Program Management Support	WX/RX	NAWC-AD/PAX/Various	19.684	1.070	11/00	0.695	11/01	0.425	11/02		21.874	
Miscellaneous (efforts < \$m each)	WX/RX	Various	7.252	0.104	11/00	0.698	11/01	0.421	11/02		8.475	
SBIR Assessment	RX					0.769					0.769	
Subtotal Management			26.936	1.174		2.162		0.846			31.118	
Remarks:												
Total Cost			393.066	39.537		27.886		5.758		5.929	472.176	
Remarks:												

R-1 SHOPPING LIST - Item No. 107

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 14 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME R2260 Specific Emitter ID					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.482	1.003	1.019	1.017	1.016	1.015	1.014	Continuing	Continuing
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: 1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.390) SEI technology was extended to address intentionally modulated and other complex waveform threats. - (U) (\$.590) Miniaturized SEI technology finalized for transition in tactical platforms and national-technical-means. - (U) (\$.502) The development and demonstration of an integrated and remotely operated surveillance system has been accelerated. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.603) Work will focus on increased sensor fusion and automation to reduce staffing and support remote access and control capability. - (U) (\$.400) Development will commence on an autonomous surveillance system capable of providing emitter signal information to a central location. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.519) Demonstrate the sensor fusion and automation aspects of SEI systems to reduce staffing and support remote access and control capability. - (U) (\$.500) Continue development and demonstrate feasibility of an autonomous surveillance system capable of providing emitter signal information to a central location. 											

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME R2260 Specific Emitter ID	
(U) B. PROGRAM CHANGE SUMMARY:			
	FY2001	FY2002	FY2003
(U) FY 2002 President's Budget:	1.527	1.012	
(U) Adjustments from the President's Budget:	-0.045	-0.009	
(U) FY 2003 President's Budget:	1.482	1.003	1.019
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2001 net decrease of \$.045 million consists of -.011 for .7% pro-rata rescission; -.003 government-wide rescission; -.001 SBIR reduction; and -.030 execution adjustments . The FY 2002 net decrease of \$.009 million is due to Section 8123 management reform initiative adjustment.			
(U) Schedule: Not Applicable			
(U) Technical: Not Applicable			
(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable			

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 16 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	RT
PROJECT NUMBER AND NAME R2260 Specific Emitter ID		
<p>(U) D. ACQUISITION STRATEGY: This an Engineering Development Program.</p> <p>(U) E. SCHEDULE PROFILE: Not Applicable</p>		

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Exhibit R-2, RDTEEN Budget Item Justification
(Exhibit R-2, page 17 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604270N Electronic Warfare Development				R2260 Specific Emitter ID					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	C/FFP	ITT, Virginia		0.400	02/01	0.200	02/02	0.200	02/03	0.350	1.150	1.150
Software Development	WR	NRL, Washington, DC		0.300	10/00	0.200	10/01	0.200	10/02	Continuing	Continuing	
Government Engineering Support	WR	NRL, Washington, DC		0.150	10/00	0.100	10/01	0.100	10/02	Continuing	Continuing	
Contractor Engineering Support	C/FFP	AIMS, Maryland		0.150	03/01	0.150	03/02	0.150	03/03	0.300	0.750	0.750
Award Fees												
Subtotal Product Development				1.000		0.650		0.650		Continuing	Continuing	
Remarks:												
Subtotal Support												
Remarks:												

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 18 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604270N Electronic Warfare Development				R2260 Specific Emitter ID					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	WR	NRL, Washington, DC		0.289	10/00	0.164	10/01	0.180	10/02	0.543	1.176	
Developmental Test & Evaluation	C/FFP	CACI, Virginia		0.150	03/01	0.150	03/02	0.150	03/03	0.500	0.950	0.950
Subtotal T&E				0.439		0.314		0.330		1.043	2.126	
Remarks:												
Program Management	WR	NRL, Washington, DC		0.043	10/00	0.039	10/01	0.039	10/02	Continuing	Continuing	
Subtotal Management				0.043		0.039		0.039		Continuing	Continuing	
Remarks:												
Total Cost				1.482		1.003		1.019		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 19 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME Z1742 EW TECHNICAL DEVELOPMENT					
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	1.687	0.910	0.997	1.058	1.081	1.119	1.143	1.166	1.166	10.327	
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Skunkworks is a CNO N64 funded effort that focuses on the quick reaction prototyping of tactical information warfare systems. This program directly addresses various fleet requirements, airborne and surface cryptologic operational requirements documents and the joint requirements oversight council mission needs statement for information warfare systems and capabilities across the spectrum of conflict. The projects developed under this program are designed to deny, degrade, disrupt or destroy enemy command and control communications. These systems provide information dominance to friendly forces during conflict which is necessary for success.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.275) Final integration of airborne IW pod - (U) (\$.300) Heliborne IW jammer test support and follow-on development - (U) (\$.100) FURY development and support - (U) (\$.200) Unmanned aerial vehicle IW payload development - (U) (\$.035) Concept exploration of high performance aircraft pod <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.300) Airborne IW pod test and certification - (U) (\$.400) Heliborne jammer development - (U) (\$.200) Unmanned aerial vehicle IW payload development - (U) (\$.097) High performance aircraft IW pod design <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.400) Heliborne jammer development, test and evaluation - (U) (\$.200) Unmanned aerial vehicle IW payload test and development - (U) (\$.458) High performance aircraft IW pod development 											

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	February 2002	
PROJECT NUMBER AND NAME Z1742 EW TECHNICAL DEVELOPMENT			
(U) B. PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.)			
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:	0.945	1.005	
(U) Adjustments from the FY 2002 President's Budget:	-0.035	-0.008	
(U) FY 2003 President's Budget submit:	0.910	0.997	1.058
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2001 net decrease of \$.035 million consists of SBIR Reduction. The FY 2002 net decrease of \$.008 million consists of Congressional adjustment.			
(U) Schedule: N/A			
(U) Technical: N/A			
(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A			

R-1 SHOPPING LIST - Item No. 107

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**Exhibit R-2, RDTEN Budget Item Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME Z1742 EW TECHNICAL DEVELOPMENT			
(U) D. ACQUISITION STRATEGY: N/A					
(U) E. SCHEDULE PROFILE:					
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Engineering Milestones	FURY	FURY Upgrade HELIBORNE Jammer HPA IW POD Airborne Antennas	UAV Payload HPA IW POD Portable Jammer	Mult-Functional Jammer	Mult-Functional Jammer
(U) T&E Milestones	HELIBORNE RUBICON FURY Test	UAV IW Payload Test	Airborne Antenna FURY Upgrade	HPA IW POD Portable Airborne Jammer UAV Payload Test	HPA IW POD Portable Airborne Jammer UAV Payload Test
(U) Contract Milestones					

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**Exhibit R-2, RDTEEN Budget Item Justification
(Exhibit R-2, page 22 of 24)**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA 5			0604270N Electronic Warfare Development				Z1742 EW TECHNICAL DEVELOPMENT					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	Var	Var	0.266	0.278	Var	0.400	Var	0.450	Var		1.394	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.266	0.278		0.400		0.450			1.394	
Remarks:												
Development Support Equipment												
Software Development	Var	Var	0.100	0.150	Var	0.156	Var	0.097	Var		0.503	
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.100	0.150		0.156		0.097			0.503	
Remarks:												

R-1 SHOPPING LIST - Item No. 107

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 23 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME Z1742 EW TECHNICAL DEVELOPMENT						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	Var	Var	0.250	0.250	Var	0.200	Var	0.200	Var		0.900	
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.250	0.250		0.200		0.200			0.900	
Remarks:												
Contractor Engineering Support	Var	Var	0.100	0.100	Var	0.100	Var	0.120	Var		0.420	
Government Engineering Support	Var	Var	0.100	0.100	Var	0.100	Var	0.130	Var		0.430	
Program Management Support												
Travel	Var	Var	0.050	0.032	Var	0.041	Var	0.061	Var		0.184	
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.250	0.232		0.241		0.311			1.034	
Remarks:												
Total Cost			0.866	0.910		0.997		1.058			3.831	
Remarks:												

R-1 SHOPPING LIST - Item No. 107

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 24 of 24)

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FY 2003 RDT&E, N PROJECT JUSTIFICATION

Exhibit R-2, RDT&E,N Budget Item Justification

Date: February 2002

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0604280N

PROGRAM ELEMENT TITLE: Joint Tactical Radio Systems

COST (\$ in Thousands)	FY	FY	FY	FY	FY	FY	FY	Cost to Complete	Total Cost
	2001	2002	2003	2004	2005	2006	2007		
X3073 Joint Tactical Radio Systems (JTRS-M/F)	0	0	20,373	35,102	37,886	34,373	7,006	CONT	CONT
Total P.E. Cost	0	0	20,373	35,102	37,886	34,373	7,006	CONT	CONT

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable UHF satellite communications. Per CJCSI 6251.01, JTRS-M/F replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. JTRS-M/F initial baseline provides the framework for meeting the planned future SATCOM, Line of Sight (LOS) and Beyond LOS communications requirements in the 2MHz to 2 GHz spectrum. Additionally, JTRS-M/F provides for advanced higher data rate and capacity waveforms in the UHF spectrum critical to supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation. The Maritime and Fixed Station JTRS (JTRS-M/F) will be evolutionary in development with Block I consisting of a modification of the Digital Modular Radio (DMR) to JTRS hardware and software compliance. JTRS-M/F Block I will meet narrowband requirements of the Navy tactical communications. JTRS-M/F Block II will be a newly developed radio that will meet both narrowband and wideband requirements.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

B. (U) PROGRAM CHANGE SUMMARY: N/A

C. (U) OTHER PROGRAM FUNDING SUMMARY: See individual projects.

D. (U) ACQUISITION STRATEGY: See individual projects.

E. (U) SCHEDULE PROFILE: See individual projects.

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FY 2003 RDT&E, N PROJECT JUSTIFICATION

Exhibit R-2a, RDT&E, N Project Justification

Date: February 2002

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0604280N PROJECT NUMBER: X3073
PROGRAM ELEMENT TITLE: Joint Tactical Radio Systems PROJECT TITLE: JTRS

Cost (\$ in Thousands)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
X3073 JTRS			20,373	35,102	37,886	34,373	7,006	CONT	CONT

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

(U) The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable UHF satellite communications. Per CJCSI 6251.01, JTRS-M/F replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. JTRS-M/F initial baseline provides the framework for meeting the planned future SATCOM, Line of Sight (LOS) and Beyond LOS communications requirements in the 2MHz to 2 GHz spectrum. Additionally, JTRS-M/F provides for advanced higher data rate and capacity waveforms in the UHF spectrum critical to supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation. The Maritime and Fixed Station JTRS (JTRS-M/F) will be evolutionary in development with Block I consisting of a modification of the Digital Modular Radio (DMR) to JTRS hardware and software compliance. JTRS-M/F Block I will meet narrowband requirements of the Navy tactical communications. JTRS-M/F Block II will be a newly developed radio that will meet both narrowband and wideband requirements.

FY 2001 ACCOMPLISHMENTS:

- N/A

FY 2002 PLAN:

- See Program Element 0303109N, Project Number X0731.

FY 2003 PLAN:

- (\$3,373) Complete development of contract package for JTRS-M/F Block II as the follow-on to JTRS-M/F Block I.
- (\$17,000) Complete the modification of DMR to be compliant with JTRS software architecture. The modified DMR will be renamed as JTRS-M/F Block I.

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 FY 2003 RDT&E, N PROJECT JUSTIFICATION

Exhibit R-2a, RDT&E, N Project Justification

Date: February 2002

BUDGET ACTIVITY: 7 PROGRAM ELEMENT: 0604280N PROJECT NUMBER: X3073
 PROGRAM ELEMENT TITLE: Joint Tactical Radio Systems PROJECT TITLE: JTRS

B. (U) OTHER PROGRAM FUNDING SUMMARY

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
OM&N 4A6M - JTRS	0	0	2,813	1,851	2,087	2,123	2,187	Cont	Cont
OPN SATCOM - JTRS* 321500	0	0	2,217	56,784	74,167	121,722	120,097	Cont.	Cont.

*FY01-FY02 Other Funding Summary is reflected in Program Element 0303109N, Project Number X0731

C. (U) ACQUISITION STRATEGY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Program Milestones: N/A			3Q Milestone B 4Q RFP Release
T&E Milestones: N/A			

D. (U) SCHEDULE PROFILE: See paragraph C.

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FY 2003 RDT&E, N PROJECT JUSTIFICATION

Exhibit R-3, RDT&E, N Project Cost Analysis

Date: February 2002

BUDGET ACTIVITY: 7

PROGRAM ELEMENT: 0604280N

PROJECT NUMBER: X3073

Cost Categories	Contract Method & Type	Performing Activity & Location	FY 00 and Prior	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	CPIF	GD DS	N/A	0		0		15,000	Dec-02	400	21,400	21,400
	Various	Various						2000				
Remarks:												
System T&E	Various	Various	N/A	0	N/A	0	N/A	373	Dec-02	CONT	CONT	
Remarks												
Program Management	Various	Various	N/A	0	N/A	0	N/A	3,000	Dec-02	CONT	CONT	
Remarks												
Total Cost			N/A	0	N/A	0	N/A	20,373		CONT	CONT	
Remarks												

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5				DD (X) Total Ship Systems Engineering/0604300N					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	286.444	235.235	717.397	923.649	1354.041	1705.084	1311.339	CONT.	CONT.
DD (X) Construction/32463	0.000	0.000	0.000	0.000	248.208	652.175	559.108	CONT.	CONT.
DD (X) Sys Des, Dev & Int ¹ /32464	146.940	133.265	618.246	853.683	1055.258	1042.623	745.234	CONT.	CONT.
DC/Survivability/32465	6.060	0.000	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
Multi-Function Radar (MFR)/32466	82.104	66.073	47.346	23.831	12.847	10.286	6.997	CONT.	CONT.
Volume Search Radar (VSR)/32735	51.340	28.711	51.805	46.135	37.728	0.000	0.000	0.000	215.719
Power Node Control Center (PNCC)/32880	0.000	2.726	0.000	0.000	0.000	0.000	0.000	0.000	2.726
Reg Elec. Pwr. Tec, Integ & Lev (REPTILE)/39062	0.000	2.973	0.000	0.000	0.000	0.000	0.000	0.000	2.973
Aluminum Mesh Tank Liner/39063	0.000	1.487	0.000	0.000	0.000	0.000	0.000	0.000	1.487
Quantity of RDT&E Articles	0	**2/TBD	0	0	0	0	0	CONT.	CONT.

Notes: (1) (U) DD (X) Systems Design, Development, and Integration. Project formerly known as Design.
 (2) (U) Funding for efforts directly related to DD (X) design and systems integration has been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and PE 0604300N, Project 32465 in FY 2002 and out.
 (3) (U) Funding for this project has been reprogrammed to PE 0603513N in FY 2002 and out.
 (4) (U) All requirements in FY 2001 and beyond are consolidated in PE 0604300N, Project 32735.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides funds for development of the DD (X) Class of U. S. Navy surface combatants, advanced development R&D which is integral to DD (X); and Detailed Design and Construction of the first ship. The mission of the DD (X) class is to provide affordable and credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DD (X) will provide advanced land attack capability in support of the ground campaign and contribute to Naval, Joint or Combined battlespace dominance in littoral operations. DD (X) will establish and maintain surface and sub-surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DD (X) will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction. PNCCs have the potential to integrate all of the shipboard power functions, such as switching, conversion, distribution and system operation and protection. This technology will support present and future surface ship and submarine platforms as a building block for increased use of electrical equipment. REPTILE is an initiative for the advancement of naval platform and battle-force systems through the discovery, invention, integration, leveraging and demonstration of innovative electrical technologies for naval sea and land applications. Aluminum Mesh is being used for explosion suppression applications to prevent destructive pressures from being generated after the explosive ignition of vapors and gases.

* (U) For explanation of Test Articles, see Projects 32466 and 32735.

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

DD (X) Total Ship Systems Engineering/0604300N

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) FY 2002 President's Budget:	289.591	355.093	
(U) Appropriated Value:	292.274	237.343	
(U) Adjustment's to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	-3.147	-119.858	
(U) FY 2003 President's Budget Submit:	286.444	235.235	717.397

(U) Funding:

The 2001 net decrease of \$3.147M is due to a Small Business Innovative Research (SBIR) reduction (-\$6.373M) and miscellaneous programmatic adjustments (+\$3.226M). The FY 2002 decrease of \$119.858M is for a Congressional Reduction (-\$125.000M), Congressional Adds (+\$7.250M), Section 8123 Management Reform Initiatives (-\$2.097) and miscellaneous adjustment (-\$0.011M).

(U) Schedule: See individual projects

(U) Technical Parameters: Technical parameters are contained in the DD 21 Operational Requirements Document (ORD) approved by JROC on 16 October 1997.

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	DD (X) Total Ship Systems Eng/0604300N				PROJECT NAME AND NUMBER				
RDT&E, N/BA-5					DD (X) System Design, Development & Integration ¹ /32464				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	146.940	(1) 133.265	618.246	853.683	1055.258	1042.623	754.234	CONT.	CONT.
RDT&E Articles Qty	0	0	0	0	0	0	0	CONT.	CONT.
<p>Notes: (1) Project formerly known as Design. (2) (U) Funding for efforts directly related to DD (X) design and systems integration have been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and PE 0604300N, Project 32465 in FY 2002 and out.</p> <p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project encompasses efforts for the total ship system engineering development and integration of Hull, Mechanical and Electrical (HM&E), communications, electronics, command and control, combat, weapons and shipboard systems into the DD (X) class. These engineering development and integration efforts include systems engineering, analysis, software development, interface design, technical documentation, and system/subsystem testing to ensure fully functional systems integration. These efforts also include development and testing (factory, land-based and at-sea) of the following Engineering Development Models (EDMs): Total Ship Computing Environment, Advanced VLS, Integrated Deckhouse and Apertures, Autonomic Fire Suppression System, Infrared mock-ups, AGS magazine and Hull Form Scale Model. These systems engineering development efforts are required to ensure that DD (X) is a totally integrated ship system, delivering required warfighting technologies to the fleet within the reduced manning and cost goals.</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$104.519) Continued Initial System Design (Contract Phase II). Completed initial development of Smart Product Model virtual prototype for contract Phase II. This included development of the total ship computing architecture and computer programs that integrated Combat Systems to support reduced Navy manning and improved LCE&S concepts, HM&E, and administrative functions. Continued development of Smart Product Model virtual prototype to support contract and detailed design of DD (X). - (U) (\$30.434) Continued support of DD (X) Technical Team responsible for the participation, oversight and monitoring of the two industry designs during Contract Phase II and following downselect to one DD (X) industry team. Participated in/evaluated System Functional Review (SFR) and downselection. The Engineering team consisted of Government Labs, Universities and selected technical support contractors. The Technical Team provided the expertise to evaluate/support the DD (X) industry design in the areas of Combat Systems, HM&E, Signatures, C4ISR, Modeling and Simulation, Total Ship Computing, Test and Evaluation, Manning, and LCE&S. 									

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DD (X) System Design, Development & Integration/32464
<p>- (U) (\$5.880) Continued development of DD (X) LFT&E plan. The DD (X) LFT&E program focused on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapon Threat Effects. These areas addressed critical elements of DD (X) survivability as defined in the Test and Evaluation Master Plan (TEMP), the LFT&E Management Plan, and the Operational Requirements Document (ORD). Test results will be used to improve modeling and simulation capability and will support DD (X) design evaluations.</p> <p>- (U) (\$6.107) Continued identification and risk mitigation efforts in high risk areas such as manning, LCE&S, and Total Ship Computing. Continued Manning/Human Systems Integration (HSI) and LCE&S IPTs to address the impact of how industry-developed concepts will impact the future Navy support infrastructure in these functional areas. Reviewed and developed proposed policy changes as a result of DD (X) industry concepts that impact Navy manning and life cycle support structure as a result of FSC proposals.</p> <p>2. (U) FY 2002 PLAN:</p> <p>- (U) (\$113.400) Continue Initial System Design (Contract Phase II), complete DD (X) downselect and begin DD (X) System Design (Contract Phase III). This includes system and subsystem development of the HM&E, C4ISR, total ship computing and software development, modeling and simulation (including Smart Product Model), and planning, development, and implementation of the life cycle support and engineering concepts. Contract Phase III also includes the planning and development of the test and evaluation infrastructure required for the first DD (X) ship.</p> <p>- (U) (\$13.110) Continue support of DD (X) Technical Team. The Technical Team provides the expertise to evaluate/support the DD (X) industry design in the areas of Combat Systems, HM&E, C4ISR, Modeling and Simulation, Total Ship Computing, and Test and Evaluation. Establish team to review and certify Full Service Contractor (FSC) software development.</p> <p>- (U) (\$2.781) Continue development of the DD (X) LFT&E plan. The DD (X) LFT&E program focuses on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapons Threat Effects. These areas address critical elements of DD (X) survivability as defined in the Test and Evaluation Master Plan (TEMP), the LFT&E Management Plan, and the Operational Requirements Document (ORD). Conduct a Live Fire event using a supersonic threat missile against a ship target with some portion of distributed shipboard systems such as firemain or electrical system intact and operating on the target ship.</p> <p>- (U) (\$3.974) Continue identification and risk mitigation efforts in high risk areas such as manning, LCE&S, and Total Ship Computing. Continue Manning/HSI and LCE&S IPTs to address the impact of how industry-developed concepts will impact the future Navy support infrastructure in these functional areas. Monitor the industry-developed risk watch list and evaluate as a mechanism for reporting risk metrics in DD (X) Aquisition reporting documentation. Review and develop proposed policy changes as a result of DD (X) industry concepts that impact Navy manning and life cycle support structure as a result of industry proposals.</p>		

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DD (X) System Design, Development & Integration/32464

3. (U) FY 2003 PLAN:

- (U) (\$541.740) Continue DD (X) System Design (Contract Phase III). This includes spiral design development, system and subsystem development of the HM&E, C4ISR, total ship computing and software development, modeling and simulation (including Smart Product Model), planning, development and implementation of the life cycle support and engineering concepts, and planning and development of the test and evaluation infrastructure required for the first DD (X) ship. Conduct Preliminary Design Review (PDR). Conduct Integrated Baseline Review (IBR) to establish the DD (X) Performance Management Baseline (PMB). Implement Earned Value Management System.
- (U) (\$47.248) Continue support of the DD (X) Technical Team. The Technical Team provides the expertise to evaluate/support the DD (X) industry design in the areas of Combat Systems, HM&E, C4ISR, Modeling and Simulation, Total Ship Computing, and Test and Evaluation. Continue review and certification of the Full Service Contractor software development.
- (U) (\$15.472) Execute to DD (X) LFT&E Management Plan. The DD (X) LFT&E program focuses on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, Advanced Weapons Threat Effects and required documentation. These areas address critical elements of DD (X) survivability as defined in the DD (X) Test and Evaluation Master Plan (TEMP) 1560 Rev A, the LFT&E Management Plan Change 1, and the Operational Requirements Document (ORD). In FY03, test results from a Live Fire test event planned for FY02 will be used to improve survivability modeling and simulation capabilities, support DD (X) design development, contribute to development of the next DD (X) Vulnerability Assessment Report (VAR). Additionally FY03 activities will include conduct of live fire testing consistent with the LFT&E Management Plan Change 2.
- (U) (\$13.786) Continue identification and risk mitigation efforts in high-risk areas such as manning, LCE&S and Total Ship Computing. Continue Manning/ HSI and LCE&S Integrated Product Teams to address the impact of how the industry design will impact the future Navy support infrastructure in these functional areas. Monitor the industry-developed risk watch list and evaluate as a mechanism for reporting risk metrics in DD (X) Aquisition reporting documentation. Review and develop proposed policy changes as a result of the DD (X) industry design that impacts Navy manning and life cycle support structure.

R-1 SHOPPING LIST - Item No. 109-5 of 109-24

Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2002
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DD (X) System Design, Development & Integration/32464
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B. (U) OTHER PROGRAM FUNDING SUMMARY:

COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
Shipboard System Component Dev/0603513N	246.032	295.135	243.111	163.618	141.524	81.547	72.556	CONT.	CONT.

C. (U) ACQUISITION STRATEGY:

(U) The DD (X) acquisition strategy encompasses five contract phases: Phase I – System Concepts, Phase II – Initial System Design, Phase III – System Design, Phase IV – Detail Design and Construction, and Phase V – Engineering and Logistics Life Cycle Support. The Navy awarded section 845/804 agreements for Phases I and II for two DD (X) Industry teams. Downselection to a single DD (X) Contractor team will occur in the 3rd quarter of FY 2002 to begin Contract Phase III.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			DD (X) System Design, Development & Integration/32464						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Initial System Concepts - Phase I	Sec 845/804	DD (X) Industry Team	54.800	0.000	N/A	0.000	N/A	0.000	N/A	0.000	54.800	
Initial System Design/System, Subsystem Design - Phase II	Sec 845/804	DD (X) Industry Team	0.000	104.519	Various	35.400	Various	0.000	N/A	0.000	139.919	
Primary H/W Development - Phase III	CPIF	DD (X) Design Agent	0.000	0.000	N/A	78.000	3QFY02	510.000	1QFY03	CONT.	CONT.	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			54.800	104.519		113.400		510.000		CONT.	CONT.	
<p>Remarks: Funding for the DD 21 industry team for efforts directly related to DD 21 design and systems integration has been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and from PE 0604300N, Project 32465 in FY 2002 and out.</p>												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
<p>Remarks: (U) Support costs during this period are rolled up in development contracts costs.</p>												

R-1 SHOPPING LIST - Item No. 109-8 of 109-24

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 24)

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Exhibit R-3 Cost Analysis (page 2)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			DD (X) System Design, Development & Integration/32464						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Live Fire Test & Evaluation	Sec 845/804	DD (X) Industry Teams	2.425	2.450	Various	0.000	N/A	0.000	N/A	0.000	4.875	
	CPIF	DD (X) Design Agent	0.000	0.000	N/A	0.000	N/A	4.100	12/02	CONT.	CONT.	
	WR	NSWC CD Bethesda, MD	6.832	3.430	11/00	0.000	N/A	4.550	11/02	CONT.	CONT.	
	WR	NSWC DD Dahlgren, VA	0.200	0.000	11/00	0.000	N/A	0.750	11/02	CONT.	CONT.	
	Various	Various	2.369	0.000	N/A	2.781	02/02	6.072	11/02	CONT.	CONT.	
Subtotal T&E			11.826	5.880		2.781		15.472		CONT.	CONT.	
Remarks:												
Contractor Engineering Support	GSA/FFP	Anteon Arlington, VA	3.300	1.500	11/00	2.000	02/02	17.817	11/02	CONT.	CONT.	
	GSA	BAE Systems, Rockville, MD	2.000	0.000	N/A	0.000	N/A	0.000	N/A	CONT.	CONT.	
	GSA	GRCI, Falls Church, VA	0.000	1.500	11/00	1.000	02/02	3.842	11/02	CONT.	CONT.	
	Misc.	Various	1.800	1.800	11/00	0.500	02/02	3.665	11/02	CONT.	CONT.	
Government Engineering Support	WR	NSWC DD Dahlgren, VA	24.790	12.082	11/00	3.860	02/02	25.105	11/02	CONT.	CONT.	
	WR	NSWC CD Bethesda, MD	7.080	7.300	11/00	2.036	02/02	14.995	11/02	CONT.	CONT.	
	WR	NSWC CR Crane, IN	2.757	0.635	11/00	0.320	02/02	1.500	11/02	CONT.	CONT.	
	WR	NSWC PHD Pt Hueneme, CA	1.870	1.615	11/00	0.720	02/02	4.500	11/02	CONT.	CONT.	
	WR	SSCSD San Diego, CA	2.640	1.871	11/00	1.146	02/02	2.204	11/02	CONT.	CONT.	
	WR	NUWC/N Newport, RI	2.005	0.850	11/00	0.000	N/A	1.500	11/02	CONT.	CONT.	
	WR	NSWC/PC Panama City, FL	0.000	0.800	11/00	0.180	02/02	1.240	11/02	CONT.	CONT.	
	Various	Gov't Activities	6.680	1.734	11/00	2.703	02/02	6.200	11/02	CONT.	CONT.	
University Research	CPFF	APL/JHU Laurel, MD	4.072	2.366	11/00	1.919	02/02	4.775	11/02	CONT.	CONT.	
Program Management Support	Various	Various	7.271	1.738	11/00	0.500	02/02	3.931	11/02	CONT.	CONT.	
Travel	Various	Various	0.762	0.750	Various	0.200	02/02	1.500	11/02	CONT.	CONT.	
Subtotal Management			67.027	36.541		17.084		92.774		CONT.	CONT.	
Remarks:												
Total Cost			133.653	146.940		133.265		618.246		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 109-9 of 109-24

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 9 of 24)

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA-5		DD (X) Total Ship Systems Eng/0604300N			DC/Survivability/32465					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		6.060	(1) 0.000	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
RDT&E Articles Qty		0	0	0	0	0	0	0	CONT.	CONT.
<p>Notes: (1) (U) Funding for this project has been reprogrammed to PE 0603513N, Project 32465 in FY 2002 and out.</p> <p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project funds the engineering development of DD (X) ship protection and damage control/firefighting systems and features that reduce vulnerability against conventional weapons (e.g., missiles, mines, torpedoes) and peacetime accidents that enable an effective recovery of mission capability. The requirements for this project are based on the need to develop affordable, balanced DD (X) survivability designs that address recent wartime lessons learned and meet established DD (X) survivability goals.</p> <p>(U) Additionally, this project addresses survivability requirements applicable to the existing fleet and other ship acquisition programs (e.g., LPD 17, CVX, LHX). Development areas include: 1) computer-based damage control systems that enable reduced manning through systems automation, minimizing the need for manual Damage Control (DC) actions; 2) personnel protection systems/devices that increase endurance and reduce stress on DC personnel during sustained operations; 3) tactics and doctrine for attacking major threat, ship threatening conflagration; 4) damage tolerant structures that increase hull girder survival against underwater explosions; and 5) system protection devices that enable continued system operation after damage. In FY 2001, PEO (S) was given funding to perform studies related to Power Node Control Centers (PNCCs). PNCCs have the potential to integrate all of the shipboard power functions, such as switching, conversion, distribution and system operation and protection. This technology would support present and future surface ship and submarine platforms as a building block for increased use of electrical equipment. The PNCC concept can potentially improve survivability by enabling an electrical system architecture that can locate and clear faults automatically, provide continuity of power through fast switching and rerouting of power, and provide electrical nodes capable of programmable, multi-function, operations.</p>										

R-1 SHOPPING LIST - Item No. 109-10 of 109-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 10 of 24)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DC/Survivability/32465					
<p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$0.416) Continued development of the pre-hit Configuration Management capability including development of post-hit electrical fault clearing approaches for medium voltage systems. Initiated planning for electrical system T&E to evaluate system isolation performance under projected threat conditions. Completed development of a lightweight firefighting/boundary suit ensemble. - (U) (\$2.531) Completed initial System Design and engineering of DD (X) DC/Survivability systems. Began system/subsystem development of DC/Survivability systems. - (U) (\$0.200) Continued design of damage tolerant hull girder configurations that limit holing and flooding and prevent ship sinking from close-in UNDEX. - (U) (\$2.913) Power Node Control Centers. Performed studies to assess the impact of using PNCCs on solid state breakers within the IPS architectures. Examined how PNCC concept could be integrated into the IPS design. Designed/developed engineering hardware model. <p>2. (U) FY 2002 PLAN: See PE 0603513N, Shipboard System Component Development.</p> <p>3. (U) FY 2003 PLAN: See PE 0603513N, Shipboard System Component Development.</p> <p>B. (U) OTHER PROGRAM FUNDING SUMMARY:</p>										
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
Shipboard System Component Dev/0603513N		246.032	295.135	243.111	163.618	141.524	81.547	72.556	CONT.	CONT.
<p>C. (U) ACQUISITION STRATEGY:</p>										

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/BA-5

PROGRAM ELEMENT NAME AND NUMBER

DD (X) Total Ship Systems Eng/0604300N

PROJECT NAME AND NUMBER

DC/Survivability/32465

D. (U) SCHEDULE PROFILE:

FY 2001

4Q Electrical Options (Prel)

1Q DD (X) System/Subsystem Development of DC/Survivability systems

4Q Lightweight Firefighting Boundary Suit

FY 2002

3Q PNCC hardware model

R-1 SHOPPING LIST - Item No. 109-12 of 109-24

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Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 12 of 24)

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Exhibit R-3 Cost Analysis (page 1)						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DC/Survivability/32465				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	SPD/Phila. PA	0.000	2.200	02/02			0.000	2.200	
Ancillary Hardware Development										
Systems Engineering										
Product Development	Sec 845/804	DD (X) Industry Team	4.599	2.389	11/00			0.000	6.988	
	WR	NSWC CD Bethesda, MD	3.871	0.844	06/01			CONT.	CONT.	
	Various	Other Govt. Activities	5.251	0.627	Various			CONT.	CONT.	
Subtotal Product Development			13.721	6.060			0.000	CONT.		
Remarks: For FY 2002 and out, this effort has been reprogrammed to PE 0603513N, Project 32465. See those exhibits for FY 02 information.										
Development Support Equipment										
Software Development										
Training Development										
Integrated Logistics Support										
Configuration Management										
Technical Data										
GFE										
Subtotal Support			0.000	0.000		0.000		0.000	0.000	
Remarks:										

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Exhibit R-3 Cost Analysis (page 2)						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DC/Survivability/32465				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation										
Operational Test & Evaluation										
Tooling										
GFE										
Subtotal T&E			0.000	0.000		0.000		0.000	0.000	
Remarks:										
Contractor Engineering Support										
Government Engineering Support										
Program Management Support										
Travel										
Labor (Research Personnel)										
Overhead										
Subtotal Management			0.000	0.000		0.000		0.000	0.000	
Remarks:										
Total Cost			13.721	6.060		0.000		CONT.	CONT.	
Remarks:										

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 14 of 24)

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA-5		DD (X) Total Ship Systems Eng/0604300N			Multi-Function Radar (MFR) / 32466					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		82.104	66.073	47.346	23.831	12.847	10.286	6.997	CONT.	CONT.
RDT&E Articles Qty		0	1	0	0	0	0	0	CONT.	CONT.
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the development of the Multi-Function Radar (MFR) in association with DD (X) and CVN 77. This provides DD (X) and other applicable surface ships with an affordable, high performance radar for ship defense well into the next century. This system is based on solid state, active array radar technology and will provide search, detect, track, and weapon control functions while dramatically reducing manning and life cycle costs associated with multiple systems that perform these functions today. The MFR will achieve a level of force protection that greatly enhances ship defense capability against all threats envisioned in the littoral environment. A Test Article will be available in FY 02 to support DT/OA land-based and at-sea testing.</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$71.479) Continued E&MD phase of MFR. Continued EDM hardware procurement and start fabrication. Transmit/Receive (T/R) Module Production Readiness Review completed. - (U) (\$4.003) Provided Government Engineering Services support for E&MD. Performed oversight and assessment of MFR E&MD efforts. - (U) (\$5.000) Began evaluation, planning, documentation and scheduling for FY 02 Developmental Tests and Operational Assessment (DT/OA). - (U) (\$1.622) Provided Program Management in support of the above program milestones. <p>2. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$52.800) Continue E&MD phase of MFR hardware & software. Conduct Factory Testing. Provide test and integration support for Navy Land Based Testing. - (U) (\$5.463) Government Engineering Services and program management support for E&MD. Perform oversight and assessment of MFR E&MD efforts. - (U) (\$6.167) Continue evaluation, planning, documentation and scheduling for DT/OA. - (U) (\$1.643) Provide Program Management in support of the above program milestones. 										

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Multi-Function Radar (MFR) / 32466					
<p>3. FY 2003 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$17.820) Continue E&MD phase of MFR. Continue Factory Integration Testing. Deliver EDM to Navy Land Based Test Site. Provide test and integration support for Navy Land Based Testing. Begin MFR Transition to Production efforts. - (U) (\$8.380) Government Engineering Services and program Management support for E&MD. Perform oversight and assessment of MFR E&MD efforts. Evaluate EDM delivered unit. Support Navy Land Based Testing. Support MFR Transition to Production efforts. - (U) (\$19.431) Continue evaluation, planning, documentation and scheduling for DT/OA. Conduct DT/OA. Begin transition to production, including the development, fabrication, documentation and engineering support associated with the following efforts: (1) high speed automated manufacturing equipment, (2) test equipment and associated test program sets, (3) systems engineering and test engineering support and (4) failure analysis, parts engineering and configuration management. - (U) (\$1.715) Provide Program Management in support of the above program milestones. <p>B. (U) OTHER PROGRAM FUNDING SUMMARY:</p>									
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
Shipboard System Component Dev/0603513N	246.032	295.135	243.111	163.618	141.524	81.547	72.556	CONT.	CONT.
<p>C. (U) ACQUISITION STRATEGY:</p> <p>(U) In FY 1999, the Government selected a single MFR contractor (Raytheon) to begin Phase III E&MD. EDM delivery will be in FY 2002.</p>									

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 16 of 24)

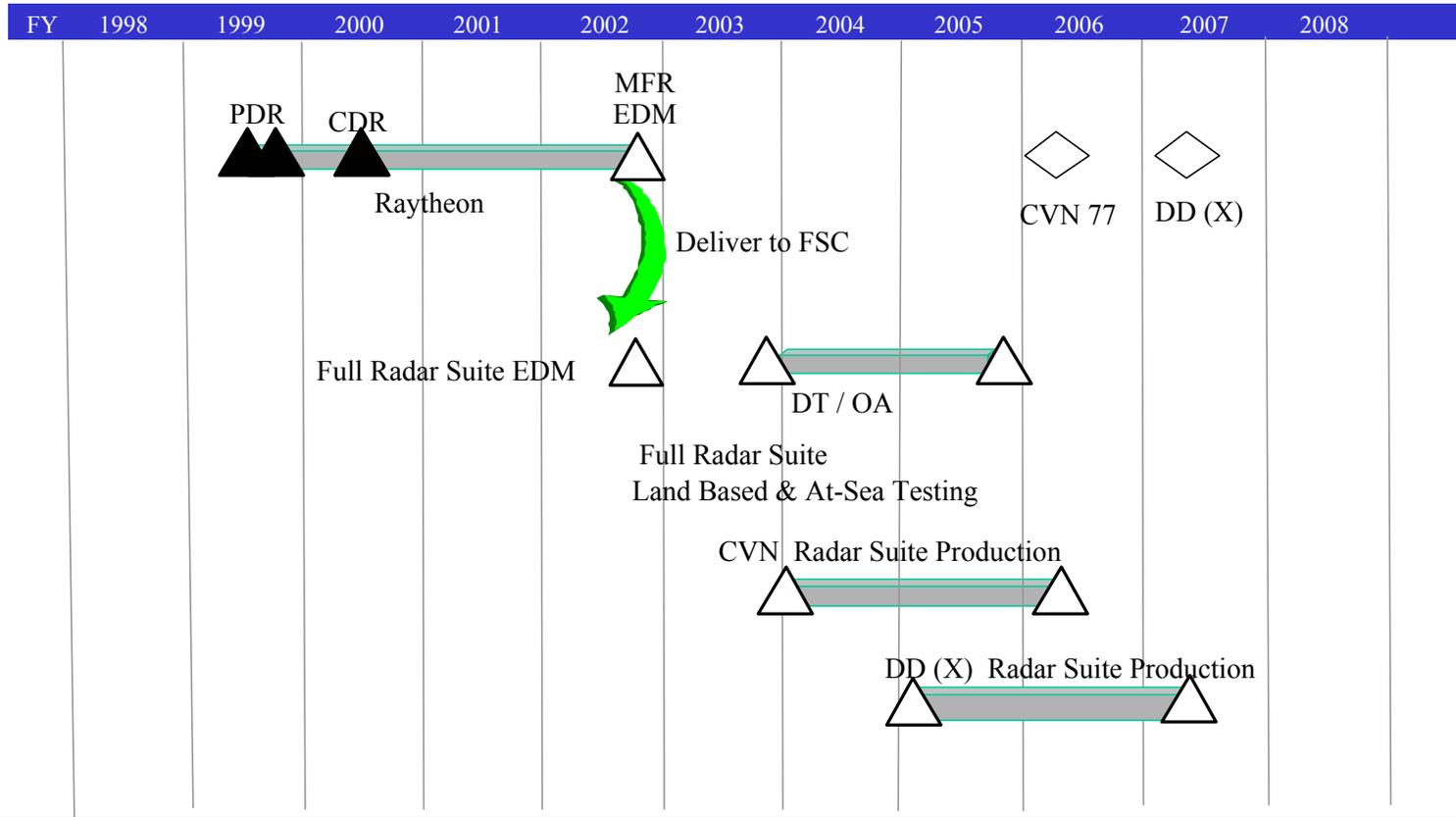
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER Multi-Function Radar (MFR) / 32466

D. (U) SCHEDULE PROFILE:



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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 17 of 24)

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Exhibit R-3 Cost Analysis (page 1)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			Multi-Function Radar (MFR) / 32466						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	CPAF/IF	Prime E&MD (Raytheon)	50.400	71.479	11/00	52.800	Various	17.820	12/02	CONT.	CONT.	195.000
	Sec 845/804	DD (X) Industry Team	2.434	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.434	
	CP	Various	12.414	0.000	N/A	0.000	N/A	0.000	N/A	0.000	12.414	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			65.248	71.479		52.800		17.820		CONT.	CONT.	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			Multi-Function Radar (MFR) / 32466						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	Various	Various		5.000	11/00	3.089	02/02	5.431	11/02	CONT.	CONT.	
	TBD	SCSC Wallops Isd,VA	0.000	0.000	N/A	1.176	02/02	8.000	11/02	CONT.	CONT.	
	SS/CPFF	JHU/APL Laurel, MD	0.000	0.000	N/A	0.872	02/02	2.000	11/02	CONT.	CONT.	
	WR	NSWC PHD Pt Hueneme,CA	0.000	0.000	N/A	1.030	02/02	4.000	11/02	CONT.	CONT.	
Subtotal T&E			0.000	5.000		6.167		19.431		CONT.	CONT.	
Remarks:												
Government Engineering Support	WR	NSWC DD Dahlgren, VA	2.000	1.500	11/00	1.567	02/02	1.650	11/02	CONT.	CONT.	
	WR	NSWC PHD Pt Hueneme,CA	1.000	0.800	11/00	0.964	02/02	1.015	11/02	CONT.	CONT.	
	SS/CPFF	JHU/APL Laurel, MD	1.000	1.000	11/00	1.220	02/02	1.275	11/02	CONT.	CONT.	
	WR	Various	2.197	0.703	11/00	1.712	02/02	4.440	11/02	CONT.	CONT.	
Program Management Support	C/CPFF	Various	0.600	1.622	11/00	1.643	02/02	1.715	11/02	CONT.	CONT.	
Travel												
Subtotal Management			6.797	5.625		7.106		10.095		CONT.	CONT.	
Remarks:												
Total Cost			72.045	82.104		66.073		47.346		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 109-19 of 109-24

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Volume Search Radar (VSR) / 32735					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		51.340	28.711	51.805	46.135	37.728	0.000	0.000	CONT.	215.719
RDT&E Articles Qty		0	1	0	0	0	0	0	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the development of the Volume Search Radar (VSR) in association with DD (X). This provides DD (X) and other applicable surface ships with an affordable, high performance air search radar. This system is based on solid state, active array radar technology and will provide search, detect, and track while dramatically reducing manning and life-cycle costs associated with multiple systems that perform these functions today. VSR provides long range above-the-horizon surveillance and timely cueing to MFR. A Test Article will be available in FY 02 to support DT/OA land-based and at-sea testing.

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$47.000) Completed initial Critical Design Reviews (CDRs) in early FY01 for both DD (X) competing teams and continued development efforts.
- (U) (\$4.128) Provided Government Engineering Services support for Engineering and Manufacturing Development (E&MD). Performed oversight and assessment of VSR E&MD efforts and system integration.
- (U) (\$0.212) Provided Program Management in support of the above program milestones.

2. (U) FY 2002 PLAN:

- (U) (\$26.100) Continue Phase II development efforts. After DD (X) downselect, the Full Service Contractor (FSC) will procure Engineering Development Model (EDM) hardware and start fabrication. Continue E&MD phase of VSR, and conduct factory testing. Provide test and integration planning support for Navy Land Based Testing.
- (U) (\$0.929) Provide Government Engineering Services support for E&MD. Perform oversight and assessment of MFR E&MD efforts. Support Navy Land Based Test Planing.
- (U) (\$1.097) Conduct VSR test and evaluation, planning, documentation and scheduling.
- (U) (\$0.585) Provide Program Management in support of the above program milestones.

R-1 SHOPPING LIST - Item No. 109-20 of 109-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 20 of 24)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Volume Search Radar (VSR) / 32735				
<p>3. (U) FY 2003 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$38.000) Continue E&MD phase of VSR and deliver EDM to the Navy Land Based Test Site. Provide test and integration support for Navy Land Based Testing. - (U) (\$7.213) Provide Government Engineering Services support for E&MD. Perform oversight and assessment of MFR E&MD efforts. Evaluate delivered EDM unit. Support Navy Land Based Testing. - (U) (\$5.382) VSR Test and Evaluation, planning, documentation and scheduling. - (U) (\$1.210) Provide Program Management in support of the above program milestones. 										
<p>B. (U) OTHER PROGRAM FUNDING SUMMARY</p>										
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
Shipboard System Component Dev/0603513N		246.032	295.135	243.111	163.618	141.524	81.547	72.556	CONT.	CONT.
<p>C. (U) ACQUISITION STRATEGY:</p> <p>(U) Downselection to a single DD (X) Contractor team to occur in the 3rd qtr of FY2002. The DD(X) Design Agent will initiate fabrication delivery of the VSR EDM in FY 2003. MFR/VSR Radar Suite DT/OA is anticipated in FY 2003 through FY 2005.</p>										

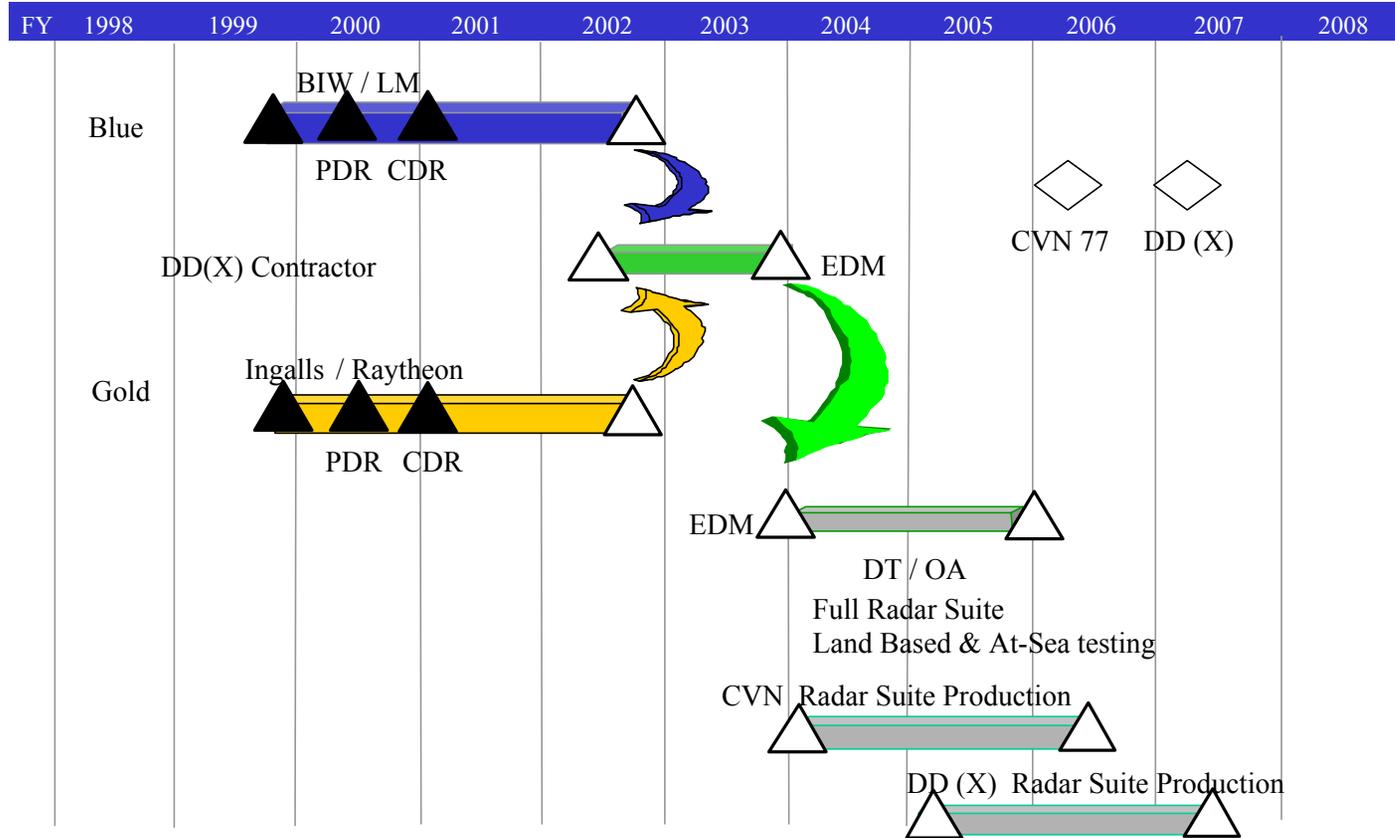
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER DD (X) Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER Volume Search Radar (VSR) / 32735

D. (U) SCHEDULE PROFILE:



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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 22 of 24)

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			Volume Search Radar (VSR) / 32735						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	Sec 845/804	DD (X) Industry Team	0.000	47.000	N/A	3.100	Various	0.000	N/A	0.000	50.100	
	CPIF	DD(X) Design Agent	0.000	0.000	N/A	23.000	3QFY02	38.000	1QFY03	CONT.	CONT.	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			0.000	47.000		26.100		38.000		CONT.	CONT.	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 109-23 of 109-24

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 24)

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			DD (X) Total Ship Systems Eng/0604300N			Volume Search Radar (VSR) / 32735						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	WR	NSWC DD Dahlgren, VA				0.000	02/02	1.000	12/02	CONT.	CONT.	
	WR	NSWC PHD Port Hueneme, CA				0.000	N/A	1.000	12/02	CONT.	CONT.	
	TBD	SCSC Wallops Island, VA				0.600	02/02	2.000	12/02	CONT.	CONT.	
	TBD	Various				0.497	Various	1.382	12/02	CONT.	CONT.	
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		1.097		5.382		CONT.	CONT.	
Remarks: No Developmental or Operational Test and Evaluation will be conducted during FY 1999 through FY 2001.												
Government Engineering Support	WR	NSWC DD Dahlgren, VA	0.000	1.443	11/00	0.203	02/02	0.675	12/02	CONT.	CONT.	
	WR	Various	0.000	2.685	11/00	0.726	02/02	6.538	12/02	CONT.	CONT.	
Program Management Support	CPFF	Various	0.000	0.212	11/00	0.585	02/02	1.210	12/02	CONT.	CONT.	
Travel												
Subtotal Management			0.000	4.340		1.514		8.423		CONT.	CONT.	
Remarks:												
Total Cost			0.000	51.340		28.711		51.805		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 109-24 of 109-24

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 24)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		
APPROPRIATION/BUDGET ACTIVITY							R-1 ITEM NOMENCLATURE		
RDT&E, N / 1319 / BA 5							AEGIS COMBAT SYS ENG / PE 0604307N		
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	184.843	326.625	300.748	212.601	189.352	215.402	173.220	CONT.	CONT.
Surf Combatant Combat Sys/K1447/K2637	178.448	255.459	291.425	201.193	144.614	151.316	109.138	CONT.	CONT.
Surf Combatant Weapon Sys Mod/K1776	3.975	4.262	4.352	4.443	4.528	4.617	4.708	CONT.	CONT.
Surf Combatant Weapons Dev/K1937	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	192.908
Smart Ship Project/K2308/K2786	2.420	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.903
Solid State SPY Radar/K3044	0.000	0.000	4.971	6.965	40.210	59.469	59.374	CONT.	CONT.
AEGIS Operational Readiness/K9064	0.000	3.965	0.000	0.000	0.000	0.000	0.000	0.000	3.965
Peripheral Consolidation/K9065	0.000	6.443	0.000	0.000	0.000	0.000	0.000	0.000	6.443
AEGIS Tactical Display/K9066	0.000	6.938	0.000	0.000	0.000	0.000	0.000	0.000	6.938
Navy Area Theater Transfer/K9067	0.000	48.567	0.000	0.000	0.000	0.000	0.000	0.000	48.567
Traveling Wave Tube Circuit/K9068	0.000	0.991	0.000	0.000	0.000	0.000	0.000	0.000	0.991

A. (U) Mission Description and Budget Item Justification

The AEGIS Combat System (ACS) provides immediate and effective capability to counter the current and expected air, surface, and sub-surface threats. Changes in the threat capability and advances in technology such as fiber optics, local area networks, and high performance computing require corresponding AEGIS Weapon System (AWS) and ACS changes. This program provides the ACS engineering and selected weapons development necessary for a continued increase in the capability of AEGIS Cruisers and Destroyers. In addition to developing and integrating improvements to the AWS, this program integrates combat capabilities developed in other Navy R&D programs into the ACS. Modifications of AWS computer programs must be made to integrate these capabilities into the ACS so that battle effectiveness and ACS performance will be retained against the evolving threat. Selected AWS and ACS upgrades will be backfit into CG 47 Class and DDG 51 Class ships already in the Fleet, providing key warfighting capability while reducing life cycle maintenance costs. In addition, with the advent of using Commercial Off-the-Shelf (COTS) equipment extensively throughout the combat system, a COTS refresh development effort will be necessary to pace the core baseline development work. Introduces AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs, to the AEGIS fleet. Baseline 7 Phase II positions the AEGIS fleet for maximum warfighting improvements and life cycle support benefit and produces a system, which is easy to maintain and modernize and mitigates the cost of inevitable required technology refresh. Includes development of a Solid State replacement for the SPY-1 radar, aimed at providing the increased sensitivity and bandwidth needed for long range ballistic missile defense.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5		R-1 ITEM NOMENCLATURE AEGIS COMBAT SYS ENG / PE 0604307N	
B. Program Change Summary			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
FY 2002 President's Budget Submit:	200.330	262.037	
Appropriated Value:	202.184	329.537	
Adjustments to FY2001/2002 Appropriated Value/ Adjustments to:	-17.341	-2.912	
FY 2003 President's Budget Submit:	184.843	326.625	300.748
Funding:			
FY01: Funding changes are due to Below Threshold Reprogramming (BTR) to Ship Self Defense System (SSDS) and Evolved Sea Sparrow Missile (ESSM) (-\$8.636) , Small Business Innovation Research (SBIR)(-\$5.592), and other pricing adjustments (-\$3.113).			
FY02: Funding changes are due to an increase for AEGIS Operational Readiness Training System Network (ORTS) (+\$4.000), increase for AEGIS Peripheral Consolidation (+\$6.500), increase for AEGIS Tactical Display Upgrade (+\$7.000), Navy Area Theater Transfer (+\$49.000), increase for Traveling Wave Tube Circuit (+\$1.000), and other minor pricing adjustments (-\$2.912).			
Schedule: 1) Four COTS baseline refresh efforts have been added to the schedule because they require additional developmental efforts that necessitate replacement of commercial components to support updating operating systems, device drivers, and interfaces. COTS Refresh efforts have been added to the scope of Baseline 7 Phase IC (Two deliveries of Cruiser Conversion baseline), and two new baselines introduced to support DDG construction (Baseline 7 Phase I Refresh) and DDG Modernization (Baseline 6 Phase III Refresh).			

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EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER:				
RDT&E, N / 1319 / BA 5	AEGIS COMBAT SYS ENG PE 0604307N				Surface Combatants Combat Sys Improv - K1447/K2637/K9065/K9066/K9067				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	178.448	317.407	291.425	201.193	144.614	151.316	109.138	CONT.	CONT.
RDT&E Articles Qty									
<p>A. A. (U) Mission Description and Budget Item Justification: This program provides Cruiser and Destroyer ACS upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. Examples of captured advanced technologies are: fiber optics, distributed architecture, and high performance computing, all of which require corresponding AWS and ACS changes. ACS are upgraded in baselines. Baseline 2 (CG 52-58) consists of the Vertical Launching System, TOMAHAWK Weapon System, and Anti-Submarine Warfare upgrades. Baseline 3 (CG 59-64) includes the AN/SPY-1B Radar and AN/UYQ-21 consoles. Baseline 4 (CG 65-73) integrates the AN/UUYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY 1992 ships and includes the Joint Tactical Information Distribution System (JTIDS) Command and Control Processor, Tactical Data Information Link 16, Combat Direction Finding, Tactical Data Information Exchange System, AN/SLQ-32 (V)3 Active Electronic Counter Countermeasures, and AEGIS Extended Range (ER) Missile. Baseline 5 was developed in three steps (phases): Phase I integrated AEGIS ER and supported the missile Initial Operational Capability; Phase II integrated system upgrades including Deceptive Electronic Countermeasures, Track Load Control algorithms, and Track Initiation Processor; Phase III integrated JTIDS and the OJ-663 color display Tactical Graphics Capability into the ACS. Baseline 6 Phase I supports OPEVAL of CEC in CGs 66 and 69 and will be introduced in the DDG 51 class beginning with the last ship in FY94, DDG 79. Baseline 6 Phase III is planned for the first ship in FY 1997, DDG 85. Baseline 6 upgrades will also include embarked helicopters, Fiber Optics as applied to Data Multiplexing (FODMS), implementation of affordability initiatives, the Radar Set Controller Environmental Simulator (RSCES) and Battle Force Tactical Trainer (BFTT), Advanced Display System, Evolved SEASPARROW Missile (ESSM), Identification (ID) upgrades Phase I, Advanced TOMAHAWK Weapon System (ATWCS) Phase II, Fire Control System Upgrades, and the Joint Maritime Command Information System (JMCIS). Baseline 7 Phase I is planned for the first MYP DDG-51 Class ship in FY 1998. Major Baseline 7 upgrades include but are not limited to AN/SPY-1D(V) Radar upgrade, COTS-based advanced computer processing and the Remote Mine Hunting System. The Cruiser Conversion program will upgrade cruisers with Land Attack, and Area Air Defense Commander (AADC) capabilities. Experiences aboard AEGIS ships and shore sites have shown that COTS equipment will require a nominal four year cyclical refresh (periodic replacement) plan. This is a fact of life. Currently, these refresh efforts are not "plug and play;" rather they require additional developmental efforts that will necessitate replacement of new components with updated operating systems, device drivers, and interfaces. COTS refresh efforts are required and have been funded for Baselines 6 Phase III, 7 Phase I, and 7 Phase IC (two variants of Cruiser Conversion baseline due to radar configuration). Introduces AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs, to the AEGIS fleet. Baseline 7 Phase II positions the AEGIS fleet for maximum warfighting improvements and life cycle support benefit and produces a system, which is easy to maintain and modernize and mitigates the cost of inevitable required technology refresh. Includes development of a Solid State replacement for the SPY-1 radar, aimed at providing the increased sensitivity and bandwidth needed for long range ballistic missile defense.</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067
<p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.400) Completed modifications to the AWS computer program to allow incorporation of SM2 BLK IVA missile AAW capability . - (U) (\$5.500) Supported CEC OPEVAL (scheduled: 05/2001) on CGs 66 and 69. - (U) (\$42.042) Continued with extensive Baseline 6 Phase III ET&E and MEIT at CSEDS and the Production Test Center (PTC). Delivered program to shipyards for first stage testing in new construction ships. Conducted demo of 6 Phase III and Computer Program Acceptance Panel. Began preparations for TBMD DT/OT and ESSM DT/OT. Began developmental efforts for COTS refresh of Baseline 6 Phase III, evaluating integration of advanced warfighting capability upgrades into the AWS in order to meet the evolving threat. - (U) (\$51.156) Continued Coding, Debugging and Testing (CDT) for 7 Phase I computer program. Began developmental efforts for COTS refresh of Baseline 7 Phase I. - (U) (\$38.953) Continued development of the computer program for Cruiser Conversion in a Baseline 7 Phase I architecture which incorporates TBMD, AADC, and Land Attack capabilities and a COTS refresh into the Baseline 1 through 4 Cruisers. Updated System Design Review of the 7 Phase IC computer program. - (U) (\$21.572) Continued to provide the RDT&E share of operations of the CSED Site, Program Generation Center, Computer Program Test Site, and Land Based Test Site. - (U) (\$18.825) Provided fund for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including TBMD, CEC, ESSM, and AIEWS into the ACS. Studies produced by the Applied Physics Lab and the Naval Surface Warfare Center, Dahlgren Division (NSWC, DD) ensure effective introduction of COTS Technology. NSWC, DD personnel also provided on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the ACS. <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$20.540) Support TBMD Developmental Test (DT) and ESSM DT/Operational Testing (OT). (USD(AT&L) memo dated 14 December 2001 cancelled Area TBMD) - (U) (\$20.000) Analyze and assess candidate components to replace Diminishing Manufacturing Source (DMS) equipment for Baseline 6 Phase III COTS refresh and make final selection. Continue Designing, Coding, and Testing of Baseline 6 Phase III COTS refresh. - (U) (\$56.470) Continue with extensive Baseline 7 Phase I Engineering Test and Evaluation (ET&E) and Multi-Element Integration and Test (MEIT) at Combat Systems Engineering Development Site (CSEDS) and the Production Test Center (PTC). Deliver program to shipyards for first level testing in new construction ships. Conduct Engineering Assessment of Baseline 7 Phase I. - (U) (\$6.443) Conduct efforts to consolidate Peripheral Consolidation. - (U) (\$6.938) Conduct AEGIS Tactical Display Upgrade efforts. - (U) (\$48.567) Navy Area Theater Transfer to disable TBMD code in Baseline 6 Phase III and Baseline 7 Phase I, update documentation to include revised technical specifications, training, and ILS. Continue engineering and ship integration support and maintain quality infrastructure including site operations. - (U) (\$29.000) Analyze and assess candidate components to replace DMS equipment for Baseline 7 Phase I COTS refresh and make final selection. Continue Designing, Coding, and Testing of Baseline 7 Phase I COTS refresh. - (U) (\$90.000) Continue development of Baseline 7 Phase IC computer program for the Cruiser Conversion Program which incorporates AADC, and Land Attack capabilities into the Baseline 1 through 4 Cruisers. Conduct Preliminary Design Review. Analyze and assess candidate components to replace DMS equipment for 7 Phase IC COTS Refresh. Begin SPY Radar Engineering effort to support necessary SPY-1D(V) modifications. - (U) (\$22.261) Continue to provide the RDT&E share of operations and maintenance of the CSED site, Program Generation Center, Computer Program Test Site, and Land Based Test Site. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067
<p>FY 2002 PLAN CONT:</p> <ul style="list-style-type: none"> - (U) (\$17.188) Provides funds for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including CEC, ESSM, and AIEWS into the ACS. Studies produced by the Applied Physics Lab and the NSWC, DD ensure effective introduction of COTS. NSWC, DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the ACS. <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$6.355) Continue maturation of Baseline 6 Phase III computer program in support of ESSM DT/OT. Implement quality standard by increasing development time in an effort to reduce CPCR count and number of deficiency workarounds. - (U) (\$17.000) Replace DMS equipment with carefully selected components for Baseline 6 Phase III COTS Refresh . Continue coding, debugging and testing of Baseline 6 Phase III COTS Refresh. - (U) (\$68.610) Incorporate high priority computer program change requests for Baseline 7 Phase I in support of the Land Based DT/OT of SPY-1D(V) and to continue maturation of 7 Phase I in support of At Sea SPY-1D(V) DT/OT. Implement quality standard by increasing development time in an effort to reduceCPCR count and number of deficiency workarounds. - (U) (\$35.500) Conduct regression testing of Baseline 6 Phase III and Baseline 7 Phase I to verify and validate disabled TBMD code. Continue engineering and ship integration support and maintain quality infrastructure including site operations. - (U) (\$13.171) Introduce AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs. Conduct software requirements review. - (U) (\$21.600) Replace DMS equipment with carefully selected components for Baseline 7 Phase I COTS Refresh . Continue coding, debugging and testing of Baseline 7 Phase I COTS Refresh necessary for fielding DDGs 102-107. - (U) (\$4.100) Provides the initial funds necessary to allow for the implementation of the SIAP Blk 0 correlation/development ICP into AEGIS Baselines. - (U) (\$86.451) Continue development of Baseline 7 Phase IC computer program for the Cruiser Conversion Program which incorporates AADC and Land Attack capabilities into the Baseline 1 through 4 Cruisers. Replace DMS equipment with carefully selected components for 7 Phase IC COTS Refresh. Prepare for and conduct Critical Design Review. Begin SPY Radar Engineering effort to support necessary SPY-1A modifications to include a D(V) signal processor for Baseline I and II Cruiser Conversion. Begin integration efforts for Evolutionary warfighting capabilities. - (U) (\$21.620) Continue to provide the RDT&E share of operations and maintenance of the CSED site, Program Generation Center, Computer Program Test Site, and the Land Based Test Site. - (U) (\$17.018) Provides funds for lab and field activities to support forward fit and back fit baseline upgrades. Conduct engineering/scientific studies and analyses to minimize the risk in the introduction of increased warfighting capability including CEC, ESSM, and AIEWS into the AEGIS Combat System. Studies produced by the Applied Physics Lab and the NSWC, DD ensure effective introduction of COTS Technology. NSWC-DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the ACS. 		

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EXHIBIT R-2a, RDT&E Project Justification								DATE:																																							
								February 2002																																							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER:																																										
RDT&E, N / 1319 / BA 5	AEGIS COMBAT SYS ENG PE 0604307N				Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067																																										
<p>B. Other Program Funding Summary:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>FY 2004</u></th> <th style="width: 10%; text-align: center;"><u>FY 2005</u></th> <th style="width: 10%; text-align: center;"><u>FY 2006</u></th> <th style="width: 10%; text-align: center;"><u>FY 2007</u></th> <th style="width: 10%; text-align: center;"><u>To Complete</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>SCN LI2122 - DDG 51*</td> <td style="text-align: right;">3,282.387</td> <td style="text-align: right;">3,081.036</td> <td style="text-align: right;">2,369.502</td> <td style="text-align: right;">2,420.749</td> <td style="text-align: right;">2,371.558</td> <td style="text-align: right;">2,533.724</td> <td style="text-align: right;">2,582.399</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> <tr> <td>OPN LI5246 - AEGIS Supt. Eqp**</td> <td style="text-align: right;">43.824</td> <td style="text-align: right;">162.163</td> <td style="text-align: right;">155.654</td> <td style="text-align: right;">148.379</td> <td style="text-align: right;">137.363</td> <td style="text-align: right;">164.778</td> <td style="text-align: right;">155.762</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p>* TOA excludes outfitting and post delivery. ** FY01 includes \$10.5M plus-up for USS Cole</p> <p>Related RDT&E:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">PE 0604867C (Navy Area Missile Defense-EMD)</td> <td>PE 0604578N (Common C&D)</td> </tr> <tr> <td>PE 0603382N (Advanced Combat System Technology)</td> <td>PE 0603658N (Cooperative Engagement Capability)</td> </tr> <tr> <td>PE 0603868C (Navy Theater Wide Missile Defense)</td> <td>PE 0604755N/064756N/064757N (Ship Self Defense)</td> </tr> <tr> <td></td> <td>PE 0604366N (Standard Missile Improvements)</td> </tr> </table> <p>C. Acquisition Strategy: Combat System Improvements are implemented in Baselines as described in the project mission statement. In FY 1998, Lockheed Martin was awarded a five year omnibus contract (sole source) to develop and integrate combat system improvements, which will fund all remaining AEGIS Baseline Upgrade Development efforts. After the baseline has been completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders where the program and equipment are installed and tested along with all other elements of the shipboard combat system and associated combat support systems. The computer program is a GFE deliverable to the Production Test Center for equipment test and check out.</p>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	SCN LI2122 - DDG 51*	3,282.387	3,081.036	2,369.502	2,420.749	2,371.558	2,533.724	2,582.399	Cont.	Cont.	OPN LI5246 - AEGIS Supt. Eqp**	43.824	162.163	155.654	148.379	137.363	164.778	155.762	Cont.	Cont.	PE 0604867C (Navy Area Missile Defense-EMD)	PE 0604578N (Common C&D)	PE 0603382N (Advanced Combat System Technology)	PE 0603658N (Cooperative Engagement Capability)	PE 0603868C (Navy Theater Wide Missile Defense)	PE 0604755N/064756N/064757N (Ship Self Defense)		PE 0604366N (Standard Missile Improvements)
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																						
SCN LI2122 - DDG 51*	3,282.387	3,081.036	2,369.502	2,420.749	2,371.558	2,533.724	2,582.399	Cont.	Cont.																																						
OPN LI5246 - AEGIS Supt. Eqp**	43.824	162.163	155.654	148.379	137.363	164.778	155.762	Cont.	Cont.																																						
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	PE 0604366N (Standard Missile Improvements)																																														

R-1 SHOPPING LIST - Item No. 110-6 of 110-17

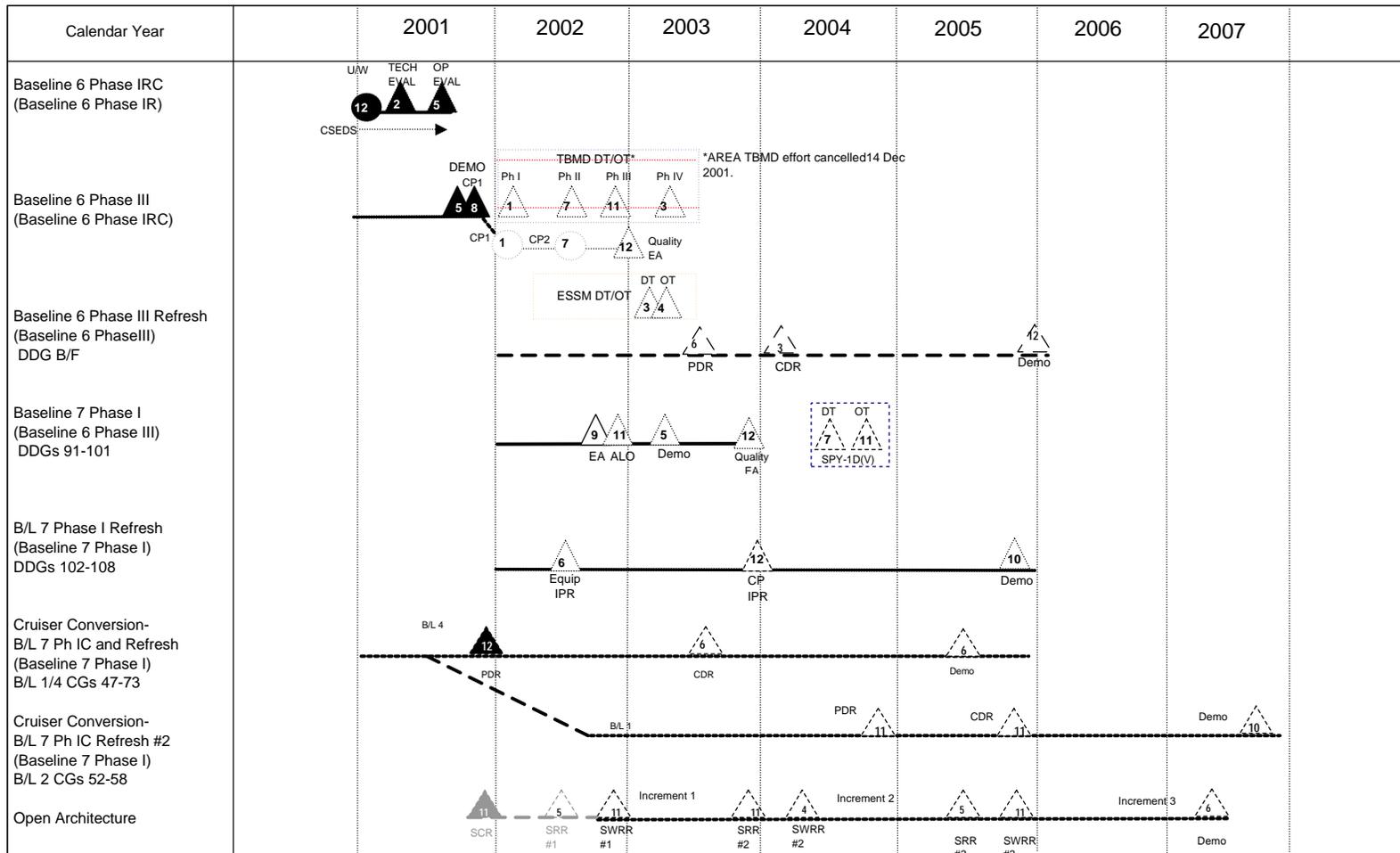
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067

D. Schedule Profile:



R-1 SHOPPING LIST - Item No. 110-7 of 110-17

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER:					
RDT&E, N / 1319 / BA 5				AEGIS COMBAT SYS ENG PE 0604307N			Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	394.849	109.092	03/01	218.606	03/02	225.312	03/03	CONT.	CONT.	
Systems Engineering	SS/CPFF	APL, Baltimore MD	22.007	2.100	10/00	2.500	10/01	1.672	10/02	CONT.	CONT.	
Systems Engineering	WR/RCP	NSWC, Dahlgren VA	45.686	13.000	12/00	16.271	12/01	14.310	12/02	CONT.	CONT.	
Systems Engineering	SS/CPAF	PCI, VA Beach, VA	2.325	2.325	03/01	3.300	03/02	3.300	03/03	CONT.	CONT.	
Systems Engineering	SS/CPAF	BAE Systems, Rockville MD	21.960	1.840	03/01	2.800	03/02	2.800	03/03	CONT.	CONT.	
Systems Engineering	WR/RCP	NWAS, Corona CA	1.100	0.703	11/00	2.250	11/01	1.290	11/02	CONT.	CONT.	
Systems Engineering	SS/CPAF	Litton	0.997	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Systems Engineering	SS/CPAF	Boeing	0.990	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Systems Engineering	SS/CPAF	General Dynamics	0.999	17.000	various	18.000	various	2.000	06/02	CONT.	CONT.	
Systems Engineering	RCP	SPAWAR	2.260	1.600	11/00	0.065	11/01	2.400	11/02	CONT.	CONT.	
Systems Engineering	CPFF	Techmatics	0.000	0.000	11/00	2.000	11/01	0.995	11/02	CONT.	CONT.	
Systems Engineering	WR/RCP	Miscellaneous	30.922	0.875	various	0.000	various	0.450	various	CONT.	CONT.	
Systems Engineering	WR/RCP	Dam Neck	0.000	0.000	na	6.443	various					
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	54.118	14.947	03/01	24.800	03/02	25.132	03/03	CONT.	CONT.	
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	0.160	0.160	03/01	0.260	03/02	0.260	03/03	CONT.	CONT.	
Award Fees	SS/CPAF	PCI, VA Beach, VA	0.175	0.175	03/01	0.275	03/02	0.275	03/03	CONT.	CONT.	
Award Fees	WR/RCP	Miscellaneous	2.790	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Subtotal Product Development			581.338	163.817		297.570		280.196		CONT.	CONT.	
Remarks:												
Support	CPFF	APL, Baltimore MD	7.396	0.200	10/00	0.200	10/01	0.200	10/02	CONT.	CONT.	
Support	WR	NSWC, Pt. Hueneme, CA	0.434	1.050	11/00	3.017	11/01	1.000	11/02	CONT.	CONT.	
Support	WR	NSWC, Dahlgren VA	1.617	1.050	12/00	0.000	12/01		12/02	CONT.	CONT.	
Support	WR/RCP	Miscellaneous	5.928	0.581	various	0.000	various	0.000	various	CONT.	CONT.	
Subtotal Support			15.375	2.881		3.217		1.200		CONT.	CONT.	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER:						
RDT&E, N / 1319 / BA 5			AEGIS COMBAT SYS ENG PE 0604307N			Surface Combatants Combat Sys Improv-K1447/K2637/K9065/K9066/K9067						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Test and Evaluation	SS/CPAF	Lockheed, Moorestown, NJ	0.000	4.500	03/01	11.822	03/02	5.071	03/03	CONT.	CONT.	
Test and Evaluation	WR	NSWC, Pt. Hueneme, CA	2.100	1.984	11/00	2.000	11/01	2.100	11/02	CONT.	CONT.	
Test and Evaluation	CPFF	APL, Baltimore MD	0.000	3.000	10/00	0.500	10/01	0.500	10/02	CONT.	CONT.	
Test and Evaluation	WR/RCP	Miscellaneous	7.904	0.788	various	0.820	various	0.850	various	CONT.	CONT.	
Subtotal T&E			10.004	10.272		15.142		8.521		CONT.	CONT.	
Remarks:												
Program Management Support	WR/RCP	Miscellaneous	3.900	1.478	various	1.478	various	1.508	various	CONT.	CONT.	
			0.000									
Subtotal Management			3.900	1.478		1.478		1.508		CONT.	CONT.	
Remarks:												
Total Cost			610.617	178.448		317.407		291.425		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No.110-9 of 110-17

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N				PROJECT NAME AND NUMBER: Surface Combatant Weapon System Mod/K1776/K9064/K9068				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
RDT&E Articles Qty	3.975	9.218	4.352	4.443	4.528	4.617	4.708	CONT.	CONT.
<p>A. (U) Mission Description and Budget Item Justification This program provides for modifications to the AWS MK-7 to counter the threat as articulated in ONI System Threat Assessment Report, ONI TA #046-93 dated May 1993 and subsequent updates. The modifications will be introduced into CG 47 Class and DDG 51 Class ships.</p> <p>FY 2001 ACCOMPLISHMENTS: - (U) (\$2.193) Continued Radar System Engineering Studies to enable AWS to meet the evolving threat. - (U) (\$0.334) Definitized signal processing requirements for a Common Moving Target Indicator (MTI)/TBMD adjunct processor design. - (U) (\$1.114) Continued ECMA upgrade effort and develop design package for transition to production. - (U) (\$0.334) Continued Operational Readiness Test System (ORTS) design efforts and support ECMA transition to production.</p> <p>FY 2002 PLAN: - (U) (\$2.964) Continue Radar System Engineering Studies to enable AWS to meet the evolving threat. - (U) (\$0.899) Continue ECMA upgrade effort and develop design package for transition to production. - (U) (\$0.399) Continue ORTS design efforts and support ECMA transition to production. - (U) (\$3.965) Initiate ORTS TAC-3 & TAC-4 updates. - (U) (\$0.991) Initiate Traveling Wave Tube Circuit efforts.</p> <p>FY 2003 PLAN: - (U) (\$2.334) Continue Radar System Engineering Studies to enable AWS to meet the evolving threat. - (U) (\$1.019) Initiate AWS Warfighting Improvements tasking. - (U) (\$0.600) Continue ECMA upgrade effort and develop design package for transition to production. - (U) (\$0.399) Initiate ORTS design efforts and support AWS Warfighting Improvements.</p>									

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5		PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N			PROJECT NAME AND NUMBER: Surface Combatant Weapon System Mod, K1776				
B. Other Program Funding Summary:									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Complete</u>	Total <u>Cost</u>
SCN LI2122 - DDG 51*	3,282.387	3,081.036	2,369.502	2,420.749	2,371.558	2,533.724	2,582.399	Cont.	Cont.
OPN LI5246 - AEGIS Supt. Eqp**	43.824	162.163	155.654	148.379	137.363	164.778	155.762	Cont.	Cont.
* TOA excludes outfitting and post delivery.									
** FY01 includes \$10.5M plus-up for USS Cole									
Related RDT&E: Not applicable.									
C. Acquisition Strategy: Lockheed Martin is the sole producer of the AEGIS Weapon System (AWS) except for the AN/SPY-1 Radar transmitter and the MK 99 CWI transmitter and illuminator which are produced by Raytheon. It is anticipated that all AWS modifications will be procured from the original equipment manufacturer.									

R-1 SHOPPING LIST - Item No. 110-11 of 110-17

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EXHIBIT R-2a, RDT&E Project Justification						DATE:	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER:	
RDT&E, N / 1319 / BA 5			AEGIS COMBAT SYS ENG PE 0604307N			Surface Combatant Weapon System Mod/K1776	
D. Schedule Profile:							
	01	02	03	04	05	06	07
Radar System Engineering	Studies / Analysis / System Solution/ Proposed Equipment Mods. / Proposed C. P. Mods						
Common MTI/TBMD Processor	System Engineering						
ORTS Upgrades	Design / Build / Test / Debug						
ORTS TAC-3 & TAC-4	Design & Develop						
ECMA	Design, Dev., and Verification / Transition to Production						
AWS Warfighting Improvements	Surface Search for SPY-1D(V) / Enhanced Ultra Dynamic Test Target (DTT) Enhancements						
Traveling Wave Tube Circuit	System Engineering						

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER:					
RDT&E, N / 1319 / BA 5			AEGIS COMBAT SYS ENG PE0604307				Surface Combatant Weapon System Mod/K1776					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	19.855	1.342	03/01	2.144		2.214		CONT.	CONT.	
Systems Engineering	WR/RCP	Naval Laboratories		0.980		0.700		0.700				
Systems Engineering		Wright Patterson AFB		0.106		0.144		0.148				
Systems Engineering	WR	Congressional Plus Ups		0.000		4.956						
Systems Engineering		Miscellaneous		1.272		0.970		0.986				
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	0.417	0.275	03/01	0.304	03/02	0.304	03/02	CONT.	CONT.	
Subtotal Product Development			20.272	3.975		9.218		4.352		CONT.	CONT.	
Remarks:												
Support	WR/RCP	Miscellaneous	1.060	0.000		0.000		0.000		CONT.	CONT.	
			0.000									
			1.060	0.000		0.000		0.000		CONT.	CONT.	
Remarks:												
Test & Evaluation	WR/RCP	Miscellaneous	0.000	0.000		0.000		0.000		CONT.	CONT.	
			0.000									
Subtotal T&E			0.000	0.000		0.000		0.000		CONT.	CONT.	
Remarks:												
Program Management Support	WR/RCP	Miscellaneous	0.000	0.000		0.000		0.000		CONT.	CONT.	
			0.000									
Subtotal Management			0.000	0.000		0.000		0.000		CONT.	CONT.	
Remarks:												
Total Cost			21.332	3.975		9.218		4.352		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No.110-13 of 110-17

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER:				
RDT&E, N / 1319 / BA 5	AEGIS COMBAT SYS ENG PE 0604307N				Solid State SPY Radar - K3044				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.000	4.971	6.965	40.210	59.469	59.374	CONT.	CONT.
RDT&E Articles Qty									
<p>A. (U) Mission Description and Budget Item Justification:</p> <p>The Solid State SPY Radar is being developed to support Theater Air and Missile Defense requirements as part of an S-Band and X-Band radar suite. The S-Band Solid State SPY Radar will provide multimission capabilities, supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as robust Area and Self Defense against air and surface threats. For the TBMD capability, increased radar sensitivity and bandwidth over the current SPY-1 system is needed to detect, track and support engagements of advanced theater ballistic missile threats at the required ranges. For the Area and Self Defense capability, increased sensitivity and clutter rejection capability is needed to detect, control, and engage stressing VLO/VLF threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an S-Band solid state replacement for the SPY-1 Radar with the required capabilities to pace the evolving threat.</p>									

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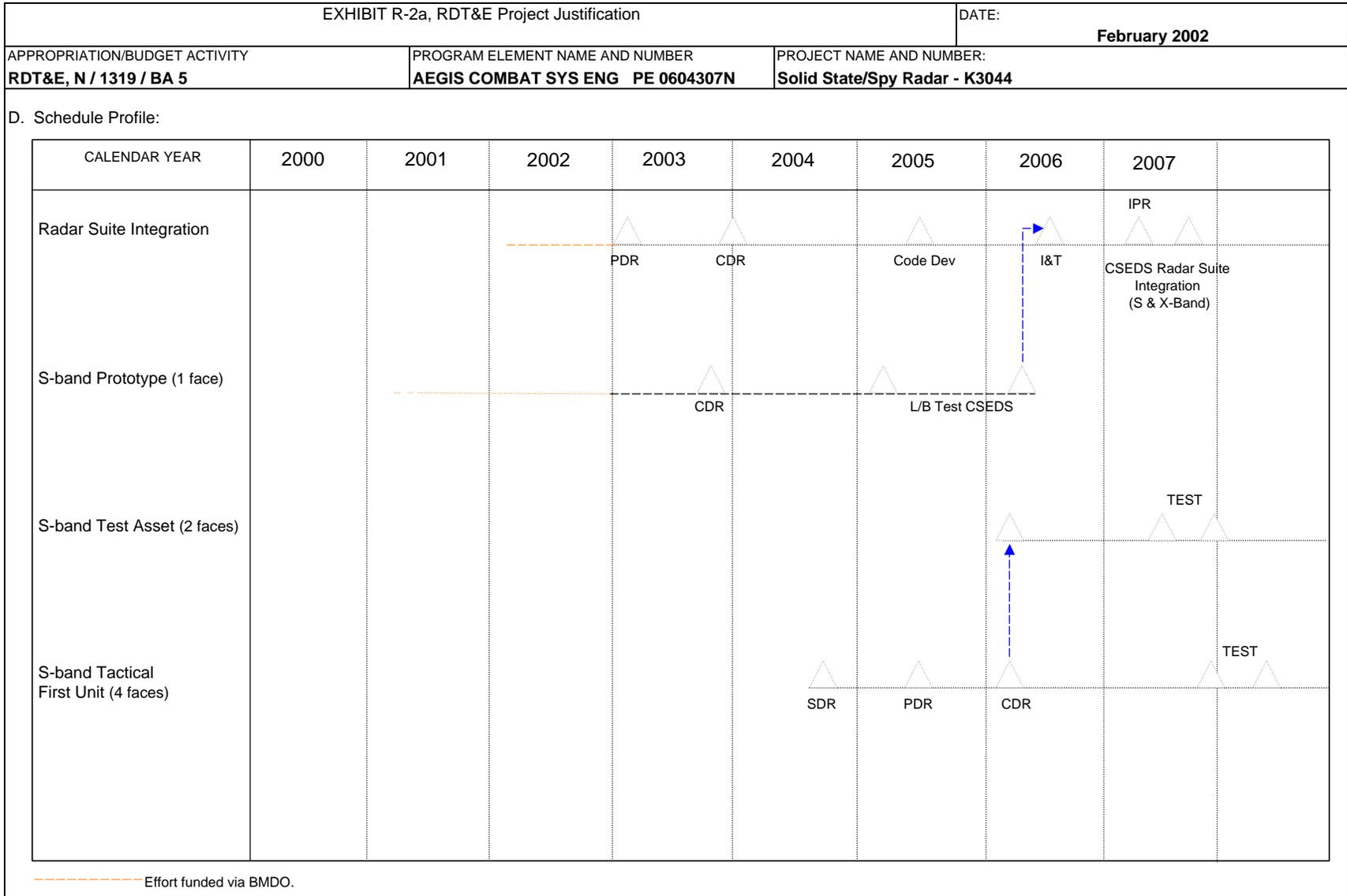
EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	February 2002
PROJECT NAME AND NUMBER: Solid State SPY Radar - K3044		
<p>A. (U) Mission Description and Budget Item Justification:</p> <p>The Theater Air and Missile Defense Radar Suite is being developed to provide a capability to destroy medium-to long-range ballistic missiles in the exoatmosphere. This S-Band/X-Band radar suite will provide a robust capability for the Theater Ballistic Missile Defense (TBMD) mission, while simultaneously supporting other required shipboard mission areas, including Ship Self Defense, Area Ballistic Missile Defense, Area Air Defense, Anti-Surface Warfare, Anti-Submarine Warfare, Counter-Fire, and Naval Surface Fire Support. For the TBMD capability, increased radar sensitivity is needed to detect, control and engage advanced theater ballistic missile threats at required ranges. This effort provides for the development of an S-Band solid state replacement for the SPY-1 Radar to provide the increased sensitivity model.</p> <p>FY 2001 ACCOMPLISHMENTS:</p> <p>N/A</p> <p>FY 2002 PLAN:</p> <p>N/A</p> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none">- (U) (\$4.0) <u>S-band Radar Development</u><ul style="list-style-type: none">- Initiate radar preliminary design- Develop system and subsystem specifications- Identify and initiate risk reduction experiments and demonstrations of enabling technologies, including high-power amplifiers (including advanced materials), T/R modules, and Thermal management and cooling technologies, line array, environmental demonstration array.- (U) (\$0.971) <u>Field Activity Support for S-band Radar Development</u><ul style="list-style-type: none">- Participate in the development of threat definitions, performance requirements and radar specifications; perform radar systems performance analysis.- Participate in Integrated Product Teams (IPTs) and Working Groups (WGs) to resolve critical technical issues. Perform supporting studies and analyses as required.		

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER:						
RDT&E, N / 1319 / BA 5			AEGIS COMBAT SYS ENG PE 0604307N			Solid State SPY Radar - K3044						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	N/A	N/A	N/A	N/A	N/A	4.000	TBD	CONT.	CONT.	
Systems Engineering	WR/RCP	Field Activities	N/A	N/A	N/A	N/A	N/A	0.971	TBD	CONT.	CONT.	
Subtotal Product Development			N/A	N/A	N/A	N/A	N/A	4.971	TBD	CONT.	CONT.	
Remarks:												
Support												
Subtotal Support												
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Test and Evaluation												
Subtotal T&E												
Remarks:												
Program Management Support												
Subtotal Management												
Remarks:												
Total Cost			N/A	N/A	N/A	N/A	N/A	4.971	TBD	CONT.	CONT.	

R-1 SHOPPING LIST - Item No. 110-17 of 110-17

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		0.236	0.992	10.133	10.384	10.549	10.746	10.950	0.000	53.990
LPD 17 Class Systems Integration/22283		0.236	0.992	10.133	10.384	10.549	10.746	10.950	0.000	53.990
Quantity of RDT&E Articles										
<p>A. Mission Description and Budget Item Justification: The 12 LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These new ships embark, transport, and land elements of Marine landing forces in an amphibious assault by helicopters, landing craft, and amphibious vehicles. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes systems configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY 1997 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible improvements include composite masts, advanced sensors, advanced computers, advanced command and control software, advanced information systems technologies, and ship based logistics concepts. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, continued personnel reductions efforts, system performance tradeoff evaluation, and naval expeditionary warfare systems engineering. Feedback from the operational forces for integrating system configurations will be accomplished through the Naval Expeditionary Warfare Centers in Quantico, Dahlgren, and Little Creek, Virginia. These efforts will result in well-defined specifications and drawings in system integration design packages that provide technical baselines for follow-on ship procurements. In addition, these efforts include the Live Fire Test & Evaluation (LFT&E) and Operational Evaluation (OPEVAL) tests required for the lead ship. This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end items prior to production approval decision.</p> <p>(U) Program Accomplishments and Plans:</p> <p>FY 2001 Plan:</p> <ul style="list-style-type: none"> (U) (.236) Continued Naval Expeditionary Warfare Systems Engineering efforts. Continued Live Fire Test and Operational Evaluation efforts. 										

R-1 SHOPPING LIST - Item No. 111-1 OF 111-5

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002																																																													
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE																																																													
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5						LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N																																																													
<p>FY 2002 Plan: - (U) (.992) Continue Naval Expeditionary Warfare Systems Engineering efforts. Continue Live Fire Test and Operational Evaluation efforts.</p> <p>FY 2003 Plan: - (U) (10.133) Continue Naval Expeditionary Warfare Systems Engineering efforts. Complete initial Warfighting Performance Improvement Configuration Definition Package. Continue Live Fire Test and Operational Evaluation efforts.</p> <p>B. Program Change Summary:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th colspan="3"></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: center;">0.273</td> <td style="text-align: center;">1.001</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to FY2002/2003: Appropriated Value/FY 2002 President's Budget</td> <td style="text-align: center;">-0.037</td> <td style="text-align: center;">-0.009</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) FY2003 Pres Budget Submit:</td> <td style="text-align: center;">0.236</td> <td style="text-align: center;">0.992</td> <td style="text-align: center;">10.133</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Funding: FY01 change reflects SBIR adjustment (-3k), (-3k) rescissions, (-26k) Mid-year adjustment, & (-5k) BTRs. FY02 changes reflect Sec 8123: Management Reform Initiative (-9K).</p> <p>Schedule: Not applicable. Technical: Not applicable.</p> <table border="0" style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 25%;"></th> <th style="text-align: center;">FY 2000 and Prior</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">Complete</th> <th style="text-align: center;">Cost</th> </tr> </thead> <tbody> <tr> <td>SCN Line 3036</td> <td style="text-align: center;">3,250.3</td> <td style="text-align: center;">480.6</td> <td style="text-align: center;">155.0</td> <td style="text-align: center;">604.5</td> <td style="text-align: center;">1,035.0</td> <td style="text-align: center;">1,081.7</td> <td style="text-align: center;">1,481.0</td> <td style="text-align: center;">1,107.8</td> <td style="text-align: center;">3839.7</td> <td style="text-align: center;">13,035.6</td> </tr> </tbody> </table>												FY 2001	FY 2002	FY 2003				(U) FY 2002 President's Budget							(U) Appropriated Value:	0.273	1.001					(U) Adjustments to FY2002/2003: Appropriated Value/FY 2002 President's Budget	-0.037	-0.009					(U) FY2003 Pres Budget Submit:	0.236	0.992	10.133					FY 2000 and Prior	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Complete	Cost	SCN Line 3036	3,250.3	480.6	155.0	604.5	1,035.0	1,081.7	1,481.0	1,107.8	3839.7	13,035.6
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R-1 SHOPPING LIST - Item No. 111-2 OF 111-5

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N	
RELATED RDT&E: PE 0604567N Ship Contract Design/Live Fire T&E			
D. Acquisition Strategy: Competitive			
	FY 2001	FY 2002	FY 2003
Program Milestones	2Q - Program Review	1Q - Program Review	
Engineering Milestones			4Q - Warfighting Performance Improvement Configuration Definition Package
T&E Milestones			2Q - Vulnerability Assessment Report 3Q - Complete OT-IIB
Contract Milestones	3Q - Advance Procurement	3Q - Advance Procurement	1Q - Follow-on Ship

R-1 SHOPPING LIST - Item No. 111-3 OF 111-5

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N			PE#0604311N - 22283				LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		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
Systems Engineering and Integration	Various	Various		0.036		0.192		3.005		28.940	32.173	
Subtotal Product Development				0.036		0.192		3.005		28.940	32.173	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support				0.000		0.000		0.000		0.000	0.000	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RDT&E, N				PE#0604311N - 22283			LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		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
DT&E/OT&E	Various	Various		0.200	11/00	0.800	11/01	7.128	11/02	13.689	21.817	
Subtotal T&E				0.200		0.800		7.128		13.689	21.817	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management				0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost				0.236		0.992		10.133		42.629	53.990	
Remarks:												

R-1 SHOPPING LIST - Item No. 111-5 OF 111-5

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05						R-1 ITEM NOMENCLATURE 0604312N Tri-Service Standoff Attack Missile (TSSAM)					
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	10.422		1.987	1.929	14.943	25.869	27.799	21.805	14.844		119.598
A2242 Joint Air to Surface Standoff Missile (JASSM)	10.422		1.987	1.929	14.943	25.869	27.799	21.805	14.844		119.598
Quantity of RDT&E Articles						5	9	4			18
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Air to Surface Standoff Missile (JASSM) program is a FY-96 new start follow-on weapon system to the canceled Tri-Service Standoff Attack Missile (TSSAM). It is a joint Air Force/Navy program. JASSM is a long range, conventional air-to-surface, autonomous precision guided, standoff cruise missile compatible with fighter and bomber aircraft and able to attack a variety of fixed and relocatable targets. JASSM will carry a 1,000 pound class penetrator warhead. Initial integration efforts will be on the B-52 and F-16. The F/A 18 E/F, C/D, S-3, P-3 and JSF are currently designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The budget covers only the cost of Navy unique testing for the Carrier Operability KPP (prior to FY03) and integration aboard the Navy F/A-18E/F including mission planning (FY03 and outyears). In FY00, \$1.500 million was added to support Carrier Operability in preparation for the 1Q 02 LRIP decision. RDT&E Test Articles breakout: 3 IMVs and 2 STVs in FY04; 5 JTVs, 2 STVs, and 2 AURs in FY05; 4 AURs in FY06.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING and MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 112

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05		PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)				PROJECT NUMBER AND NAME A2242 JASSM					
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	10.422		1.987	1.929	14.943	25.869	27.799	21.805	14.844		119.598
RDT&E Articles Qty						5	9	4			18

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Air to Surface Standoff Missile (JASSM) program is a FY-96 new start follow-on weapon system to the canceled Tri-Service Standoff Attack Missile (TSSAM). It is a joint Air Force/Navy program. JASSM is a long range, conventional air-to-surface, autonomous precision guided, standoff cruise missile compatible with fighter and bomber aircraft and able to attack a variety of fixed and relocatable targets. JASSM will carry a 1,000 pound class penetrator warhead. Initial integration efforts will be on the B-52 and F-16. The F/A 18 E/F, C/D, S-3, P-3 and JSF are currently designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The budget covers only the cost of Navy unique testing for the Carrier Operability KPP (prior to FY03) and integration aboard the Navy F/A-18E/F including mission planning (FY03 and outyears). In FY00, \$1.500 million was added to support Carrier Operability in preparation for the 1Q 02 LRIP decision. RDT&E Test Articles breakout: 3 IMVs and 2 STVs in FY05; 5 JTVs, 2 STVs, and 2 AURs in FY05; 4 AURs in FY06.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY FY 2001 ACCOMPLISHMENTS:

- (U) (\$0.259) Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements.
- (U) (\$1.728) Continued Carrier Operability and ship suitability testing (E3 Testing, Load Adapter Development, Cats/Traps Flight Tests).

2. FY 2002 PLANS:

- (U) (\$0.147) Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements.
- (U) (\$1.724) Continued Carrier Operability and ship suitability testing (Qual Navy Load Adapter).
- (U) (\$0.058) Small Business Innovative Research (SBIR) Assessment

3. FY 2003 PLANS:

- (U) (\$7.400) Begin JASSM / F/A-18E/F Windtunnel Test Series (Envelope Analysis, Captive Carriage, Loads, Flying Qualities Stability & Control)
- (U) (\$7.543) JASSM Engineering Vehicle Tests (JASSM Static Structural Tests, Develop JASSM Mission Planning Requirements, ILS & Engineering Support)

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																																																																																
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																																																																																																																	
RDT&E, N / BA-05		0604312N Tri-Service Standoff Attack Missile (TSSAM)			A2242 JASSM																																																																																																																	
<p>(U) B. PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY2001</th> <th style="width: 10%;">FY2002</th> <th style="width: 10%;">FY2003</th> <th colspan="6"></th> </tr> </thead> <tbody> <tr> <td>(U) FY2002 President's Budget:</td> <td style="text-align: right;">3.503</td> <td style="text-align: right;">1.946</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td style="text-align: right;">-1.516</td> <td style="text-align: right;">-0.017</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>(U) FY2003 President's Budget Submit:</td> <td style="text-align: right;">1.987</td> <td style="text-align: right;">1.929</td> <td style="text-align: right;">14.943</td> <td colspan="6"></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 net decrease of \$1.516 million is due to a decrease of \$1.507 million for a Reprioritization of Requirements within the Navy and a decrease of \$0.009 million for a Small Business Innovative Research (SBIR) assessment. The FY 2002 decrease of \$0.017 million is due to a decrease for an undistributed congressional reduction.</p> <p>(U) Schedule: All schedules are JASSM joint service program changes and are not Navy specific. Following the FTV-1 failure/analysis and concerns with some subcontractor USAF hardware deliveries, the USAF EMD program has gone through a modification. An additional 10 months have been added to EMD, which began in Nov 1998 and now runs for 50 months, resulting in a one-year slip of IOT&E; Low Rate Initial Production (LRIP) award has also moved 10 months from 3Q/01 to 1Q/02.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"><u>Line Item No. & Name</u></th> <th style="width: 7.5%;">FY 2001</th> <th style="width: 7.5%;">FY 2002</th> <th style="width: 7.5%;">FY 2003</th> <th style="width: 7.5%;">FY 2004</th> <th style="width: 7.5%;">FY 2005</th> <th style="width: 7.5%;">FY 2006</th> <th style="width: 7.5%;">FY 2007 To Complete</th> <th style="width: 7.5%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>USAF, PAAF</td> <td style="text-align: right;">0.150</td> <td style="text-align: right;">43.864</td> <td style="text-align: right;">50.505</td> <td style="text-align: right;">101.801</td> <td style="text-align: right;">145.494</td> <td style="text-align: right;">148.578</td> <td style="text-align: right;">197.633</td> <td style="text-align: right;">1,438.684</td> <td style="text-align: right;">2,126.709</td> </tr> <tr> <td>Quantity</td> <td style="text-align: right;">0</td> <td style="text-align: right;">76</td> <td style="text-align: right;">100</td> <td style="text-align: right;">250</td> <td style="text-align: right;">360</td> <td style="text-align: right;">360</td> <td style="text-align: right;">292</td> <td style="text-align: right;">2,262</td> <td style="text-align: right;">3,700</td> </tr> <tr> <td>USN, WPN</td> <td style="text-align: right;">0</td> <td style="text-align: right;">19.715</td> <td style="text-align: right;">300.585</td> <td style="text-align: right;">320.300</td> </tr> <tr> <td>Quantity</td> <td style="text-align: right;">0</td> <td style="text-align: right;">30</td> <td style="text-align: right;">423</td> <td style="text-align: right;">453</td> </tr> <tr> <td>USAF, RDT&E U.S. Air Force P.E. 0207325F (Joint Air to Surface Standoff Missile (JASSM)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">110.611</td> <td style="text-align: right;">79.197</td> <td style="text-align: right;">42.097</td> <td style="text-align: right;">8.822</td> <td style="text-align: right;">5.658</td> <td style="text-align: right;">0.172</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">874.702</td> </tr> </tbody> </table>											FY2001	FY2002	FY2003							(U) FY2002 President's Budget:	3.503	1.946								(U) Adjustments from the FY2002 President's Budget:	-1.516	-0.017								(U) FY2003 President's Budget Submit:	1.987	1.929	14.943							<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Complete	Total Cost	USAF, PAAF	0.150	43.864	50.505	101.801	145.494	148.578	197.633	1,438.684	2,126.709	Quantity	0	76	100	250	360	360	292	2,262	3,700	USN, WPN	0	0	0	0	0	0	19.715	300.585	320.300	Quantity	0	0	0	0	0	0	30	423	453	USAF, RDT&E U.S. Air Force P.E. 0207325F (Joint Air to Surface Standoff Missile (JASSM)											110.611	79.197	42.097	8.822	5.658	0.172	0.000	0.000	874.702
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R-1 SHOPPING LIST - Item No. 112

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 3 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)	PROJECT NUMBER AND NAME A2242 JASSM																										
<p>(U) D. ACQUISITION STRATEGY: All major contracts within the program were awarded through full and open competition. The EMD phase option for JASSM is Cost Plus Award Fee (CPAF). This contract type provides the Government the flexibility to periodically evaluate contractor performance while motivating the contractor to execute a successful program with emphasis on EMD schedule, system performance, and management effectiveness.</p> <p>JASSM is an OSD flagship program under Cost as An Independent Variable (CAIV). This allows the contractor to have maximum trade space to develop an affordable missile that meets the four Key Performance Parameters. Under CAIV, the program maintains a threshold AUPP of \$700,000 (BY95\$) and an objective AUPP of \$400,000 (BY95\$).</p> <p>The Government is buying the JASSM system based on a contractor developed, government-approved System Performance Specification (SPS) which became contractually binding at downselect. The contractor assumes Total System Performance Reliability (TSPR) as defined in the SPS and warrants system performance for 15 years. Accordingly, the contractor is responsible not only for the design of the missile system, but also for planning and executing the Development Test and Evaluation (DT&E) program to verify the missile system performance. In its role as facilitator and advisor to the contractor, the Government formally arranges and funds the use of Government flight test support for DT&E. Although funded by the Government, flight test support funds are part of the negotiated commitment between the contractor and the Government ensuring the contractor is able to execute the DT&E program according to the scope of the EMD contract.</p> <p>(U) E. SCHEDULE PROFILE: The schedule provided below contains major program milestones as well as specific Navy Carrier Operability events necessary for LRIP and MS III. F/A-18E/F Cats and Traps tests moved from 2Q FY02 to 4Q FY01 when \$1.500 was added to the Navy funding in order to conduct the tests prior to LRIP.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 30%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>1Q LRIP Decision/Award (USAF)</td> <td></td> <td>2Q/03 MS III (USAF)</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>2Q B-52 Flight Cert (USAF)</td> <td></td> <td>1Q/04 F-16 Flight Cert (USAF)</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>2Q Begin DT/OT - Navy JASSM E3 Tests 4Q F/A-18E/F Cats/Traps</td> <td>2Q Begin IOT&E (USAF) - OT&E Readiness Certification</td> <td>1Q -Begin F/A-18E/F Integration - Navy JASSM Structural Testing</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td>2Q/03 Lot I Delivery (USAF) 2Q/04 Lot II Delivery (USAF) 2Q/05 Lot III Delivery (USAF) 2Q/06 Lot IV Delivery (USAF) 2Q/07 Lot V Delivery (USAF)</td> </tr> </tbody> </table> <p>* LRIP and Lot quantities funded by USAF.</p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones		1Q LRIP Decision/Award (USAF)		2Q/03 MS III (USAF)	(U) Engineering Milestones		2Q B-52 Flight Cert (USAF)		1Q/04 F-16 Flight Cert (USAF)	(U) T&E Milestones	2Q Begin DT/OT - Navy JASSM E3 Tests 4Q F/A-18E/F Cats/Traps	2Q Begin IOT&E (USAF) - OT&E Readiness Certification	1Q -Begin F/A-18E/F Integration - Navy JASSM Structural Testing		(U) Contract Milestones				2Q/03 Lot I Delivery (USAF) 2Q/04 Lot II Delivery (USAF) 2Q/05 Lot III Delivery (USAF) 2Q/06 Lot IV Delivery (USAF) 2Q/07 Lot V Delivery (USAF)
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																								
(U) Program Milestones		1Q LRIP Decision/Award (USAF)		2Q/03 MS III (USAF)																								
(U) Engineering Milestones		2Q B-52 Flight Cert (USAF)		1Q/04 F-16 Flight Cert (USAF)																								
(U) T&E Milestones	2Q Begin DT/OT - Navy JASSM E3 Tests 4Q F/A-18E/F Cats/Traps	2Q Begin IOT&E (USAF) - OT&E Readiness Certification	1Q -Begin F/A-18E/F Integration - Navy JASSM Structural Testing																									
(U) Contract Milestones				2Q/03 Lot I Delivery (USAF) 2Q/04 Lot II Delivery (USAF) 2Q/05 Lot III Delivery (USAF) 2Q/06 Lot IV Delivery (USAF) 2Q/07 Lot V Delivery (USAF)																								

R-1 SHOPPING LIST - Item No. 112

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-05			0604312N Tri-Service Standoff Attack Missile (TSSAM)			A2242 JASSM						
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
AoA/Carrier Operability/Ship Suitability	WR	NAWC-WD	3.080	1.121	10/01	0.553	01/02	1.420	01/03		6.174	
SLAM-ER CARD Dev to Spt AoA	WR	NAWC-WD	0.300								0.300	
SLAM-ER/JASSM AoA Spt	SS/CPFF	Boeing thru PMA-258	1.600								1.600	1.600
Carrier Operability/Ship Suitability	Misc	Various	2.724	0.607	10/01	1.171	Various	2.000	Various		6.502	
JASSM Development	CPAF	Lockheed	2.473	0.121	10/01	0.128	02/02	5.165	01/03	15.101	22.988	22.988
Award Fees	CPAF	Lockheed	0.245	0.138	05/01	0.019	03/02				0.402	
Subtotal Product Development			10.422	1.987		1.871		8.585		15.101	37.966	
Remarks: Prior year funds were under Proj Unit E2242.												
Training Development	WX	NAWC-WD						0.055	12/02	2.350	2.405	
Integrated Logistics Support	Various	Various						0.263	Various	1.391	1.654	
Technical Data	CPAF	Lockheed						0.040	01/03	0.175	0.215	
Subtotal Support								0.358		3.916	4.274	
Remarks: Prior year funds were under Proj Unit E2242.												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05			PROGRAM ELEMENT 0604312N Tri-Service Standoff Attack Missile (TSSAM)			PROJECT NUMBER AND NAME A2242 JASSM						
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	NAWC(WD)						2.000	10/02	28.900	30.900	
Operational Test & Evaluation	PD	COMOPTEVFOR								9.000	9.000	
Subtotal T&E								2.000		37.900	39.900	
Remarks: Prior year funds were under Proj Unit E2242.												
Contractor Engineering Support	Various	Various						2.500	12/02	19.300	21.800	
Government Engineering Support	WX	JASSM						1.500	12/02	14.100	15.600	
Small Business Innovative Research						0.058					0.058	
Subtotal Management						0.058		4.000		33.400	37.458	
Remarks: Prior year funds were under Proj Unit E2242.												
Total Cost			10.422	1.987		1.987		14.943		90.317	119.656	
Remarks:												

R-1 SHOPPING LIST - Item No. 112

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 6 of 6)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05						R-1 ITEM NOMENCLATURE 0604329N Small Diameter Bomb (SDB)					
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	0.000		0.000	0.000	1.989					0.000	1.989
A3072 Small Diameter Bomb (SDB)	0.000		0.000	0.000	1.989					0.000	1.989
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Small Diameter Bomb (SDB) is an precision guided munition development program to provide an affordable solution to attack designated targets. SDB's ultimate objective to increase kills per sortie on current and future aircraft platforms addresses the following warfighter requirements: multiple kills per pass; multiple ordnance carriage; adverse weather, precision munitions capability; capability against hardened targets; reduced munitions footprint; increased weapons effectiveness against area targets; real-time target location and/or kill capability versus small/mobile targets; reduced susceptibility to camouflage, concealment and deception (CCD); minimize potential for collateral damage; and reduced susceptibility of munitions to countermeasures. Threshold aircraft for Phase 1 is the F-15E, with the F-16 and B-1 as Phase 2 threshold platforms. Objective aircraft include the B-2, A-10, Joint Strike Fighter (JSF), F-22, B-52 and the Unmanned Combat Aerial Vehicle (UCAV). SDB is a Pre-MDAP, ACAT1C program with the Air Force as the lead service.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEMS DEVELOPMENT & DEMONSTRATION because it encompasses systems development & demonstration of new end-items prior to production approval decision.</p>											

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05		PROGRAM ELEMENT NUMBER AND NAME 0604329N Small Diameter Bomb (SDB)				PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)					
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	0.000		0.000	0.000	1.989					0.000	1.989
RDT&E Articles Qty											0

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Small Diameter Bomb (SDB) is an precision guided munition development program to provide an affordable solution to attack designated targets. SDB's ultimate objective to increase kills per sortie on current and future aircraft platforms addresses the following warfighter requirements: multiple kills per pass; multiple ordnance carriage; adverse weather, precision munitions capability; capability against hardened targets; reduced munitions footprint; increased weapons effectiveness against area targets; real-time target location and/or kill capability versus small/mobile targets; reduced susceptibility to camouflage, concealment and deception (CCD); minimize potential for collateral damage; and reduced susceptibility of munitions to countermeasures. Threshold aircraft for Phase 1 is the F-15E, with the F-16 and B-1 as Phase 2 threshold platforms. Objective aircraft include the B-2, A-10, Joint Strike Fighter (JSF), F-22, B-52 and the Unmanned Combat Aerial Vehicle (UCAV). SDB is a Pre-MDAP, ACAT1C program with the Air Force as the lead service.

PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY FY 2001 ACCOMPLISHMENTS:

- (U) (\$0.000) Not applicable

2. FY 2002 PLANS:

- (U) (\$0.000) Not applicable

3. FY 2003 PLANS:

- (U) (\$1.989) Monitor SDB Component Advanced Development (CAD) for compatibility with Navy/Marine Corps aircraft and the carrier environment. CAD tasks include monitoring design definition for SDB and carriage system, and study Navy/Marine Corps applications.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME			
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)			A3072 Small Diameter Bomb (SDB)			
(U) B. PROGRAM CHANGE SUMMARY:							
	FY2001	FY2002	FY2003				
(U) FY2002 President's Budget:	0.000	0.000					
(U) Adjustments from the FY2002 President's Budget:	0.000	0.000					
(U) FY2003 President's Budget Submit:	0.000	0.000	1.989				
 CHANGE SUMMARY EXPLANATION:							
(U) Funding:	Not applicable.						
(U) Schedule:	Not applicable.						
(U) Technical:	Not applicable.						
 (U) C. OTHER PROGRAM FUNDING SUMMARY:							
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
RDT&E							
U.S. Air Force P.E. 0604329F (SDB)	25.000	34.653	54.368	79.519	69.401	101.934	202.432
Missile Procurement							
U.S. Air Force P.E. 0207327F					19.751	56.018	115.660
Qty					TBD	TBD	TBD

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-05	0604329N Small Diameter Bomb (SDB)	A3072 Small Diameter Bomb (SDB)	
<p>(U) D. ACQUISITION STRATEGY: Two contractors have been selected for the 24 month CAD phase using Firm Fixed Price contracts. Downselect to one contractor will occur prior to System Development and Demonstration (SDD). There will be two SDBs; a fixed target variant and a mobile target variant.</p> <p>(U) E. SCHEDULE PROFILE: The schedule provided below contains major program milestones. There currently are no Navy specific milestones within the SDB program.</p>			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
	<u>TO COMPLETE</u>		
(U) Program Milestones	4Q Milestone A		4Q Milestone B
			FY05 MS C1 (Phase I) FY07 FRP Award (Phase I) FY07 MS C2 (Phase II)
(U) Engineering Milestones		CAD Contractor I CAD Contractor II	
(U) T&E Milestones			FY04 Combined DT/OT (Phase I) FY05 Combined DT/OT (Phase II) FY05 IOT&E (Phase I) FY08 IOT&E (Phase II)
(U) Contract Milestones			4Q SDO Award

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05			PROGRAM ELEMENT 0604329N Small Diameter Bomb (SDB)			PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)						
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
Weapon Carrier Operability	WX	NAWCWD China Lake	0.000	0.000		0.000		1.000	10/03		1.000	
Aircraft Compatibility	WX	NAWCAD Patuxent River	0.000	0.000		0.000		0.989	10/03		0.989	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		1.989		0.000	1.989	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05			PROGRAM ELEMENT 0604329N Small Diameter Bomb (SDB)			PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)						
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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		0.000		1.989		0.000	1.989	
Remarks:												

R-1 SHOPPING LIST - Item No. 113

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 6 of 6)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		
							February 2002		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					Standard Missile Improvements PE 0604366N Project K0439				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	0.525	13.984	16.288	33.241	41.143	13.350	1.484	CONT.	CONT.
Standard Missile Improvements/K0439	0.525	1.297	16.288	33.241	41.143	13.350	1.484	CONT.	CONT.
Standard Missile Improvements/K2639	0.000	12.687	0.000	0.000	0.000	0.000	0.000		
Quantity of RDT&E Articles									

A. Mission Description and Budget Item Justification:

Standard Missile (SM) fuze and guidance performance degrades when the target is in close proximity to the sea surface. The low altitude improvement program will improve performance against low and very low altitude targets. This capability is currently being developed for AEGIS ships. An effort is also underway to improve performance of the MK 45 Target Detecting Device (TDD) against advanced threats and replace the MK 45 MODs 9 and 11 in future production missiles (SM-2 BLOCK IIIB) . Funding for MK 45 MOD 12/14 TDD transition to production is funded by PE 0604366N. Other required MK 45 MOD 12/14 TDD efforts are paid for by Conventional Munitions, P.E. 0603609N, Project K1821. In FY03, in Project K0439, the Next Generation Seeker development project will commence. This project, which culminates in a Live Fire Demonstration in FY05-06, will develop a new Active Radio Frequency Seeker that improves Standard Missiles' performance in multiple missions.

Standard Missile-2 (SM-2) Block IIIB is the Navy's premiere AAW MR missile. Several improvements will allow this missile to counter emerging threats. Improvements in missile maneuverability, endgame fuzing, and computer processing will accomplish this upgrade task. In FY02, in Project K2639, the SM-2 BLK IIIB AAW Enhanced Capabilities Project, will make important performance improvements to the SM-2 BLK IIIB missile.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5		R-1 ITEM NOMENCLATURE Standard Missile Improvements/PE 0604366N	
B. Other Program Change Summary:			
	FY 2001	FY 2002	FY 2003
(U) FY 2002 President's Budget:	1.183	1.309	
(U) Appropriated Value:	1.194	14.109	
(U) Adjustments to FY 2001/2002 Appropriated Value/ FY 2002 President's Budget:	-0.669	-0.125	14.903
(U) FY 2003 Pres Budget Submit:	0.525	13.984	16.288
Funding: FY01 change due to pay Request for Equitable Adjustment to Standard Missile contractor (-0.600), Small Business Innovative Research (-0.032), other adjustments (-0.037). FY02 change due to Section 8123 Management Reform Initiative (-\$.125) .			
Schedule: N/A Technical: N/A			

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:		
							February 2002		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					Standard Missile Improvements PE 0604366N Project K0439				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Standard Missile Improvements/K0439	0.525	1.297	16.288	33.241	41.143	13.350	1.484	CONT.	CONT.
Quantity of RDT&E Articles									

A. Mission Description and Budget Item Justification:

Standard Missile (SM) fuze and guidance performance degrades when the target is in close proximity to the sea surface. The low altitude improvement program will improve performance against low and very low altitude targets. This capability is currently being developed for AEGIS ships. An effort is also underway to improve performance of the MK 45 Target Detecting Device (TDD) against advanced threats and replace the MK 45 MODs 9 and 11 in future production missiles (SM-2 BLOCK IIIB) . Funding for MK 45 MOD 12/14 TDD transition to production is funded by PE 0604366N. Other required MK 45 MOD 12/14 TDD efforts are paid for by Conventional Munitions, P.E. 0603609N, Project K1821. In FY03, in Project K0439, the Next Generation Seeker development project will commence. This project , which culminates in a Live Fire Demonstration in FY05-06, will develop a new Active Radio Frequency Seeker that improves Standard Missiles' performance in multiple missions.

(U) PROGRAM PLANS AND ACCOMPLISHMENTS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$0.525) Completed critical design and development of MK 45 MOD 12/14 TDD hardware and software.

2. (U) FY 2002 PLAN:

- (U) (\$1.297) Continue MK 45 MOD 12/14 transition to production efforts

3. (U) FY 2003 PLAN:

- (U) (\$1.288) Continue MK 45 MOD 12/14 transition to production efforts
- (U) (\$15.000) Commence Next Generation Seeker development project.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5	R-1 ITEM NOMENCLATURE Standard Missile Improvements/PE 0604366N PUK0439	
<p>B. Other Program Funding Summary: Not applicable.</p> <p>C. Acquisition Strategy: Not applicable.</p> <p>D. Schedule Profile: Not applicable.</p>		

R-1 SHOPPING LIST - Item No. 114 - 4 of 114 - 10

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K0439						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 00 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
Design and Analysis	WR	NSWC/Dahlgren	785.484								785.484	
	SS/CPAF	Raytheon	2.143	0.525	03/01	1.297	11/01	1.288	11/02	0.000	Continuing	
	TBD	Contractor	0.000					13.500	11/02	0.000	Continuing	
	WR	Chief of Naval Office	0.010							0.000	0.010	
	PD	Cruise Missiles Defense Prog	4.795							0.000	4.795	
	PR	JHU/APL	0.000					0.500	11/02	0.000	Continuing	
		NAWC China Lake	0.000					0.500	11/02	0.000	Continuing	
		WSMR	0.000					0.500	11/02	0.000	Continuing	
	WR	NSWC/PHD	0.030	0.000							0.030	
	WR	NSWC/IH	0.049	0.000							0.049	
Subtotal Design and Analysis			792.511	0.525		1.297		16.288		Continuing	Continuing	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RD&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K0439						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	FFP	Technatics	0.019								0.019	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.019	0.000		0.000		0.000		0.000	0.019	
Remarks:												
Total Cost			792.530	0.525		1.297		16.288		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					R-1 ITEM NOMENCLATURE Standard Missile Improvements PE 0604366N Project K2639					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost	
Standard Missile Improvements K2639		12.687							12.687	
Quantity of RDT&E Articles										

A. Mission Description and Budget Item Justification:

Standard Missile-2 (SM-2) Block IIIB is the Navy's premiere AAW MR missile. Several improvements will allow this missile to counter emerging threats. This effort provides modest near-term AAW enhancements to improve MR (SM-2 Block IIIB) missile performance against advanced Anti-Ship Cruise Missile (ASCM) threats, particularly high-speed maneuvering sea-skimming missiles. With the cancellation of SM-2 Block IVA ER, which was to have had robust performance against such threats, it is vital to rapidly develop a capability in an existing SM variant to handle these threats until the next ER variant can be fielded. Improvements in missile maneuverability, endgame fuzing, and computer processing will accomplish this upgrade task. In FY02, in Project K2639, the SM-2 BLK IIIB AAW Enhanced Capabilities Project, will make important performance improvements to the SM-2 BLK IIIB missile.

(U) PROGRAM PLANS AND ACCOMPLISHMENTS:

1. (U) FY 2001 ACCOMPLISHMENTS: N/A
2. (U) FY 2002 PLAN:
 - (U) (\$7.046) SM-2 Block IIIB EC Maneuverability Improvement
 - (U) (\$2.954) Missile Computer Upgrade
 - (U) (\$2.000) Optical Correlator Design
 - (U) (\$0.687) SM Improvement Definition
3. (U) FY 2003 PLAN: N/A

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5	R-1 ITEM NOMENCLATURE Standard Missile Improvements/PE 0604366N PU K2639	
<p>B. Other Program Funding Summary: Not applicable.</p> <p>C. Acquisition Strategy: Not applicable.</p> <p>D. Schedule Profile: Not applicable.</p>		

R-1 SHOPPING LIST - Item No. 114 - 8 of 114 - 10

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K2639						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Design and Analysis	WR	NSWC/Dahlgren				1.836	03/02					
	SS/CPAF	Raytheon				4.202	05/02					
	PR	JHU/APL				2.595	03/02					
	PR	MIT/LL				0.100	03/02					
	WR	NSWC/PHD				0.200	03/02					
	WR	NSWC/IH				0.100	03/02					
Subtotal Product Development						9.033	03/02					
Remarks:												
Development Support Equipment		CPU Tech				2.954	03/02					
Subtotal Support						2.954	03/02					
Remarks:												

R-1 SHOPPING LIST - Item No. 114 - 9 of 114 - 10

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RD&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K2639						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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		JHU/APL				0.200						
		Contractor				0.200						
		PHD				0.100						
Subtotal T&E						0.500						
Remarks:												
Contractor Engineering Support						0.200						
Subtotal Management						0.200						
Remarks:												
Total Cost						12.687						
Remarks:												

R-1 SHOPPING LIST - Item No. 114 - 10 of 114 - 10

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002																							
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE																									
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5					Airborne Mine Countermeasures / 0604373N																									
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																				
Total PE Cost		49.573	61.097	67.240	67.027	24.861	10.872	0.000	0.000	474.469																				
Airborne Mine Hunt Systems/ Q0529/Q2884*		17.625	11.148	16.045	5.536	0.000	0.000	0.000	0.000	197.552																				
ALMDS / Q2047		17.303	13.949	18.456	9.324	0.000	0.000	0.000	0.000	81.670																				
OASIS/ Q2427/Q2883*		4.991	14.307	10.778	15.445	7.183	0.000	0.000	0.000	61.696																				
AMNS / Q2473/Q9069*		9.654	21.693	21.961	36.722	17.678	10.872	0.000	0.000	133.551																				
Quantity of RDT&E Articles																														
<p>* Funding includes the following FY02 Adds: AQS-20 Airborne Minehunting Sonar-\$2.500M; RTASS Project -\$2.800M; CH-60S Untethered Airborne Mine Neutralization-\$4.300M</p> <p>A. Mission Description and Budget Item Justification: This program develops airborne mine countermeasures systems that are required to counter known and projected mine threats. It provides a capability to locate pressure-combination and sweep resistant mines at greater coverage rates and by more rapidly deployable means. It also provides a non-acoustic mine detection and classification capability against floating and tethered mines using Light Detection and Ranging (LIDAR) techniques. Cable improvements will provide higher reliability, longer life and higher current capacity. This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items and MH-60S integration prior to production approval decision.</p> <p>B. Program Change Summary</p> <table border="0"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td>50.842</td> <td>52.041</td> <td>54.081</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td>51.312</td> <td>61.641</td> <td></td> </tr> <tr> <td>(U) Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:</td> <td>-1.739</td> <td>-0.544</td> <td>13.159</td> </tr> <tr> <td>(U) FY 2003 Pres Budget Submit:</td> <td>49.573</td> <td>61.097</td> <td>67.240</td> </tr> </tbody> </table> <p>Funding: FY01 reflects decreased funding due to SBIR (-\$1.070M), Congressional .7% Pro-rata (-\$.359M), Government-Wide recession (-\$.111M), and general execution reductions (-\$.199M). FY 02 reflects Management Reform initiative (-\$.544). FY03 reflects increased funding for the AN/AQS-20/X EMD effort (+\$15.217M), Adjust OASIS (-\$.033M), Repricing of ALMDS (-\$.6177M), Restructure RAMICS (+\$.6049M), a reduction for SYSCOM Contractor Support (-\$.379M), PBD 404 & 604 (-\$.1568M), and general adjustments (+\$.050M).</p>												FY 2001	FY 2002	FY 2003	(U) FY 2002 President's Budget:	50.842	52.041	54.081	(U) Appropriated Value:	51.312	61.641		(U) Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	-1.739	-0.544	13.159	(U) FY 2003 Pres Budget Submit:	49.573	61.097	67.240
	FY 2001	FY 2002	FY 2003																											
(U) FY 2002 President's Budget:	50.842	52.041	54.081																											
(U) Appropriated Value:	51.312	61.641																												
(U) Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	-1.739	-0.544	13.159																											
(U) FY 2003 Pres Budget Submit:	49.573	61.097	67.240																											

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5

Airborne Mine Countermeasures / 0604373N

B. Program Change Summary: (Cont'd)

Schedule: Acquisition Strategy for the Organic Airborne Mine Countermeasure programs has changed in order to reflect restructuring necessary to integrate MH-60S assets necessary to support testing. The AN/AQS-20/X program was restructured which shifts TECHEVAL from FY02 to FY03, OPEVAL from FY02 to FY04, establishes Milestone (MS) C, Full Rate Production Decision Review (FRPDR) in FY05. The ALMDS program establish a MS-C in FY04 to permit EDM refurb after OPEVAL and introduction in mid FY05. FRPDR is late FY04 . The OASIS program was restructured which shifts MS-B from FY00 to FY02, TECHEVAL shifts from FY03 to FY04, OPEVAL shifts from FY04 to FY05, and MS-C is scheduled for FY05 with a Limited Rate Production(LRIP), FRPDR is late FY05 . The MH53E portion of the AMNS program's OPEVAL shifted from FY01 to FY02, Program Decision Memorandum shifted from FY01 to FY02. The MH60S portion of the AMNS program was restructured which shifts TECHEVAL from FY03 to FY04, OPEVAL from FY03 to FY04, establishes MS-C in FY04 for MH-60S LRIP. FRPDR is mid FY05. The RAMICS program acquisition strategy establishes MS-C in FY05 for FY06 LRIP to achieve introduction in FY07. This requires acceleration of system CDR into FY03; Contractor Testing to FY04, TECHEVAL to early FY05; OPEVAL initiation in late FY05 with FRPDR in FY06.

Technical: N/A

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529/Q2884					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		17.625	11.148	16.045	5.536	0.000	0.000	0.000	0.000	197.552
RDT&E Articles Qty		2								

A Mission Description and Budget Item Justification

This project includes a sonar for mine detection, classification and identification. The Navy does not possess a capability to conduct high speed minefield reconnaissance to determine mine density and location. The AN/AQS-20/X is being developed to address the emergent requirement for mine identification and to integrate AMCM systems with a MH-60S platform. The AN/AQS-20/X will also be the minehunting sonar component for the Remote Minehunting System (RMS). The AN/AQS-20/X will be developed to meet the requirements of the Organic MCM platforms. The Laser Line Scan System (LLSS) provides interim identification capability to the AQS-14A minehunting system.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$10.734) AN/AQS-20/X – Continued fabrication/integration of EDMs.
- (U) (\$3.962) AN/AQS-20/X – Completed Critical Design Review.
- (U) (\$1.055) LLSS – Completed modification of the AQS-14.
- (U) (\$.909) LLSS – Developed of support equipment and publications.
- (U) (\$.965) (Cong Add) AN/AQS-20/X – Increased Sonar Data Recording Capability .

2. (U) FY 2002 PLAN:

- (U) (\$3.698) AN/AQS-20/X – Complete hardware integration of Towed Body with MH60 Console and parallel towed body/MH60 Console Hardware-Software Integration, Tests/Complete fabrication/integration of EDM.
- (U) (\$3.392) AN/AQS-20/X - Continue Engineering Support of EDM fabrication and Contractor Testing.
- (U) (\$.320) AN/AQS-20X - Test and Evaluation Support/Athena (Test Vessel Support).
- (U) (\$1.260) AN/AQS-20/X - Tech Data Package/Baseline Change Proposals.
- (U) (\$2.478) (cong add) AN/AQS-20X - Enhanced Capability for EDM's.

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EXHIBIT R-2a, RDT&E Project Justification							DATE:																																																				
APPROPRIATION/BUDGET ACTIVITY							February 2002																																																				
RDT&E, N , BA-5			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																																																					
			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529/Q2884																																																					
<p>3. (U) FY 2003 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$6.823) AN/AQS-20/X – EDM testing with maintainability improvements. Parallel MH60 Console Test and Common Console/Aircraft integration. - (U) (\$4.000) AN/AQS-20X - Acquire EOID test units. - (U) (\$5.222) AN/AQS-20X - Continue Engineering Support. Conduct Tow Test and Contractor Demonstration. Conduct TECHEVAL. 																																																											
<p>B. Other Program Funding Summary</p> <table border="1"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AQS-20</td> <td>21.486</td> <td>22.226</td> <td>13.061</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>78.867</td> </tr> <tr> <td>AN/AQS-14A LLSS</td> <td>4.263</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>4.263</td> </tr> <tr> <td>AQS-20/X</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>1.000</td> <td>34.139</td> <td>26.431</td> <td>63.503</td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table>											FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	OPN 424800										AQS-20	21.486	22.226	13.061	0.000	0.000	0.000	0.000	0.000	78.867	AN/AQS-14A LLSS	4.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.263	AQS-20/X	0.000	0.000	0.000	1.000	34.139	26.431	63.503	CONT.	CONT.
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																																																		
OPN 424800																																																											
AQS-20	21.486	22.226	13.061	0.000	0.000	0.000	0.000	0.000	78.867																																																		
AN/AQS-14A LLSS	4.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.263																																																		
AQS-20/X	0.000	0.000	0.000	1.000	34.139	26.431	63.503	CONT.	CONT.																																																		
<p>C. Acquisition Strategy: Starting in FY01 procure six (6) LRIP MH-53E systems and two (2) AN/AQS-20 bodies in FY02 which will be modified to AN/AQS-20/X. Following a successful DT and MS C, Sole source MH-60S system procurement will start in FY05 with a Full Rate Procurement contract following a Full Rate Production Decision Review (FRPDR).</p> <p>FY01 provided for procurement of four (4) systems AN/AQS-14A with LLSS.</p>																																																											
<p>D. Schedule Profile: See attached.</p>																																																											

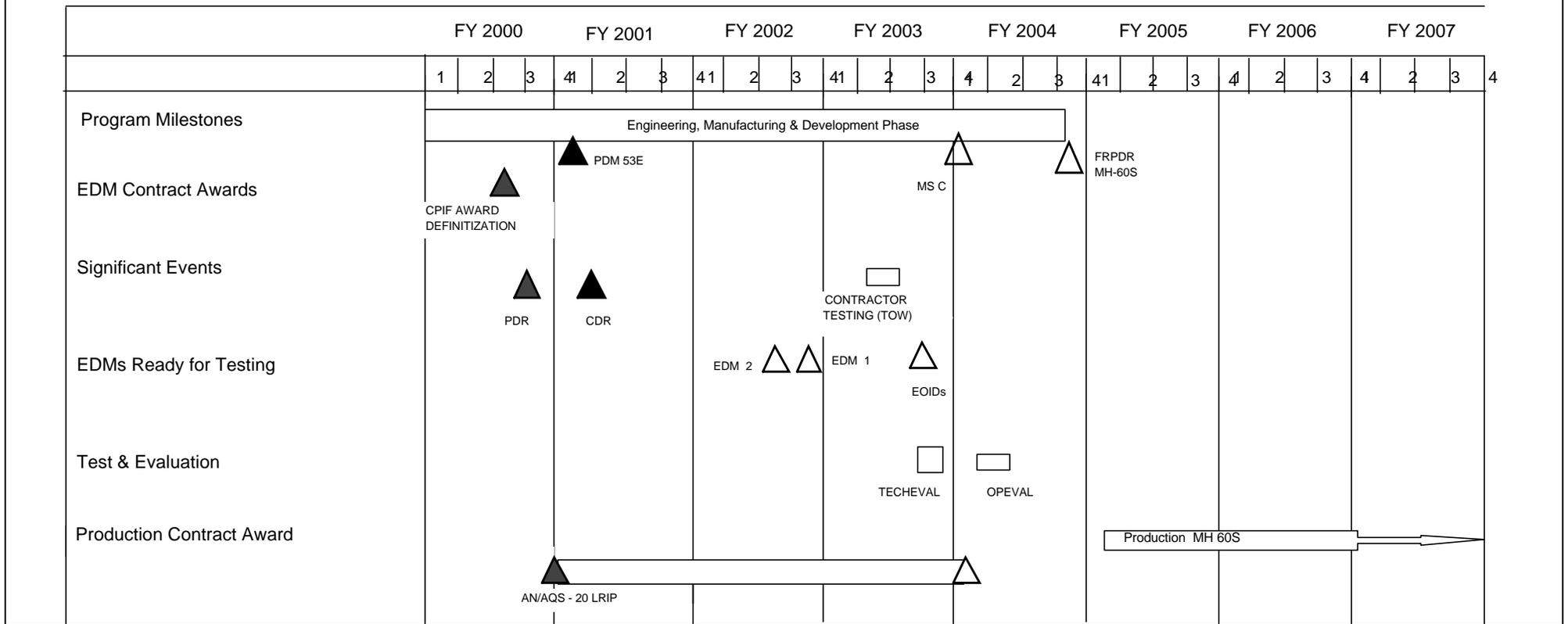
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529/Q2884

AN/AQS-20/X Schedule



R-1 SHOPPING LIST - Item No. 115 - 5 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 5 of 26)

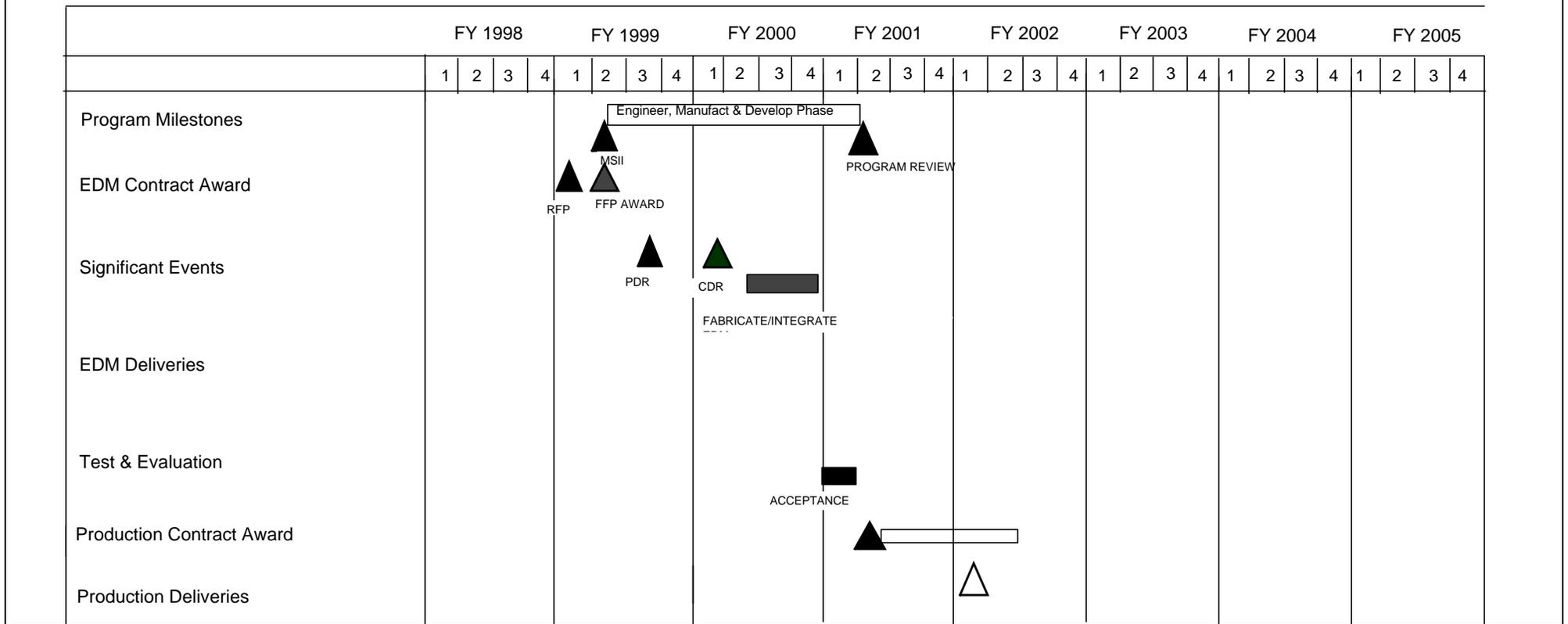
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529/Q2884

AN/AQS-14A with Laser Line Scan



R-1 SHOPPING LIST - Item No. 115 - 6 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 6 of 26)

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529/Q2884						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware/Software Development												
Hardware/Software Development	C/CPFF	Raytheon, Portsmouth, RI	60.150								60.150	
Hardware/Software Development	SS/CPIF	Raytheon, Portsmouth, RI	4.801	8.583	02/01	3.705	10/01	7.756	10/02	0.000	24.845	
Hardware/Software Development	C/FP	Lockheed, NY	4.572								4.572	
Hardware/Software Development	WR	CSS Panama City, FL	4.966			0.456	10/01	0.749	10/02	0.000	6.171	
Hardware/Software Development	SS/CPIF	Raytheon, RI (Cong Add)		0.965	7/01	2.478					3.443	
Hardware/Software Development												
Subtotal Hardware/Software Development			74.489	9.548		6.639		8.505		0.000	99.181	
Remarks:												
Engineering Services												
Engineering Services	WR	CSS Panama City, FL	16.453	2.213	10/00	2.544	10/01	1.705	10/02	2.060	24.975	
Engineering Services	C/CPFF	Raytheon, Portsmouth, RI	1.500								1.500	
Engineering Services	VAR	Various	38.380	0.282	11/00						38.662	
Engineering Services	SS/CPIF	Raytheon, Portsmouth, RI	1.500	0.441	02/01	0.848	10/01	0.700	10/02	0.300	3.789	
Subtotal Engineering Services			57.833	2.936		3.392		2.405		2.360	68.926	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 7 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 26)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529/Q2884						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Management Support												
Management Support	VAR	Various	8.991	1.252	10/00	0.502	10/01	0.390	10/02	0.350	11.485	
Travel			0.174	0.095		0.060		0.060		0.060	0.449	
Subtotal Management Support			9.165	1.347		0.562		0.450		0.410	11.934	
Remarks:												
Test & Evaluation Functions												
T&E Functions	WR	CSS Panama City	1.848	1.361	10/00	0.320	10/01	2.307	10/02	1.670	7.506	
T&E Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.000	0.422	7/01			0.770	10/02	0.300	1.492	
T&E Functions	VAR	Various	0.200	0.343	10/00			0.200	10/02	0.220	0.963	
Subtotal Test & Evaluation Functions			2.048	2.126		0.320		3.277		2.190	9.961	
Remarks:												
ILS Functions	WR	CSS Panama City	3.663	0.606	10/00	0.235	10/01	0.908	10/02	0.576	5.988	
ILS Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.000	0.326	2/01			0.500	10/02	0.000	0.826	
ILS Functions	VAR	Various	0.000	0.736							0.736	
Subtotal ILS Functions			3.663	1.668		0.235		1.408		0.576	7.550	
Remarks:												
Total Cost			147.198	17.625		11.148		16.045		5.536	197.552	

R-1 SHOPPING LIST - Item No. 115- 8 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 26)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Laser Mine Detection Systems/Q2047						
COST (\$ in Millions)			FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			17.303	13.949	18.456	9.324	0.000	0.000	0.000	0.000	81.670
RDT&E Articles Qty			3								

A. Mission Description and Budget Item Justification

Airborne Laser Mine Detection Systems (ALMDS), AN/AES-1 is a light detection and ranging (LIDAR) system for rapid detection, classification, and localization of floating and near surface tethered mines. It will be deployed on the MH-60S as part of the OAMCM suite of systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$5.950) Completed preliminary design (conduct PDR) and final design (conduct CDR).
- (U) (\$7.693) Began EDM development and software coding.
- (U) (\$.650) Continued performance model baselining.
- (U) (\$2.003) Continued ILS.
- (U) (\$1.007) Completed platform integration analyses (combat system coordination).

2. (U) FY 2002 PLANS

- (U) (\$11.608) Continue EDM development and software coding.
- (U) (\$0.140) Complete performance model baselining.
- (U) (\$2.201) Continue ILS.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER																																		
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N				Airborne Laser Mine Detection Systems/Q2047																																		
<p>3. (U) FY 2003 PLANS</p> <ul style="list-style-type: none"> - (U) (\$9.282) Continue EDM development and software coding. - (U) (\$7.458) Contractor Testing and TECHEVAL. - (U) (\$1.716) Continue ILS. <p>B. Other Program Funding Summary</p> <table style="width:100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;">FY 2001</th> <th style="width:10%;">FY 2002</th> <th style="width:10%;">FY 2003</th> <th style="width:10%;">FY 2004</th> <th style="width:10%;">FY 2005</th> <th style="width:10%;">FY 2006</th> <th style="width:10%;">FY 2007</th> <th style="width:10%;">To Complete</th> <th style="width:10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ALMDS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">11.374</td> <td style="text-align: center;">22.772</td> <td style="text-align: center;">24.108</td> <td style="text-align: center;">54.063</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: Milestone II was accomplished April 2000 and ALMDS EDM contract was awarded April 2000 by competition. In FY04, following a successful DT and MS C, the EMD program will use OPN funding to refurbish EDM systems (3) for fleet use. Full and open competition is planned for ALMDS procurement in FY05 following FRPDR.</p> <p>D. Schedule Profile: See attached.</p>											FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	OPN 424800										ALMDS	0	0	0	11.374	22.772	24.108	54.063	CONT.	CONT.
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																														
OPN 424800																																							
ALMDS	0	0	0	11.374	22.772	24.108	54.063	CONT.	CONT.																														

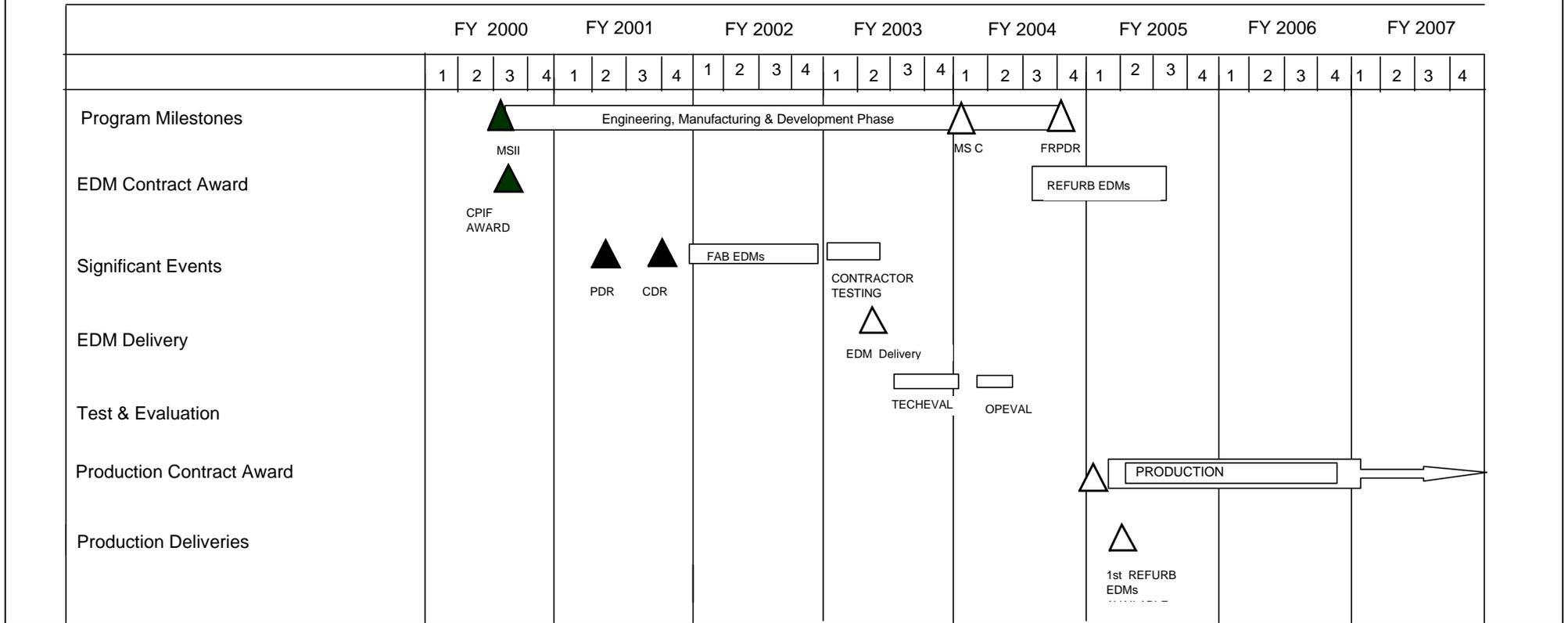
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Airborne Laser Mine Detection Systems/Q2047

AN/AES-1 Schedule



R-1 SHOPPING LIST - Item No. 115 -11 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 11 of 26)

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY01 Cost	FY 01 Award Date	FY02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WR	CSS, Panama City	0.390			0.075	10/01	0.100	10/02	0.200	0.765	
Hardware/Software Development	RCP	CSS (Prime-Northrop Grum)	7.869	6.711	12/00	4.506	10/01	1.300	10/02	0.000	20.386	
Hardware/Software Development	RCP	Metron	0.225	0.200	12/00	0.200	10/01	0.200	10/02	0.000	0.825	
Subtotal Hardware/Software Development			8.484	6.911		4.781		1.600		0.200	21.976	
Remarks:												
Engineering Services	WR	CSS, Panama City	4.958	1.471	11/00	0.937	10/01	2.247	10/02	1.833	11.446	
Engineering Services	WR	NRL Stennis	0.194	0.060	11/00						0.254	
Engineering Services	RCP	CSS (Prime-Northrop Grum)	3.816	3.330	12/00	2.486	10/01	1.449	10/02	0.000	11.081	
Engineering Services	RCP	CSS, Panama City	0.075								0.075	
Engineering Services	RCP	Metron	0.590	0.767	12/00	0.400	10/01	0.300	10/02	0.423	2.480	
Engineering Services	RCP	NRL Stennis	0.430	0.430	11/00						0.860	
Engineering Services	VAR	VARIOUS	0.275	0.131	11/00	0.130	10/01	1.130	10/02	0.225	1.891	
Subtotal Engineering Services			10.338	6.189		3.953		5.126		2.481	28.087	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 12 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 12 of 26)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY01 Cost	FY 01 Award Date	FY02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support												
Management Support	VAR	Various	1.181	1.483	12/00	2.116	10/01	2.506	10/02	2.358	9.644	
Management Support		Travel	0.100	0.070		0.050		0.050		0.050	0.320	
Subtotal Management Support			1.281	1.553		2.166		2.556		2.408	9.964	
Remarks:												
Test & Evaluation Functions												
T&E Functions	WR	CSS, Panama City	0.104	0.095	11/00			5.489	10/02	2.660	8.348	
T&E Functions	RCP	CSS (Prime-Northrop Grum)		0.160	11/00	0.848	10/01	1.294			2.302	
T&E Functions	VAR	Various		0.392	01/01			0.675	10/02	1.350	2.417	
Subtotal Test & Evaluation Functions			0.104	0.647		0.848		7.458		4.010	13.067	
Remarks:												
ILS Functions												
ILS Functions	WR	CSS, Panama City	0.217	0.280	11/00	0.671	10/01	1.068	10/02	0.200	2.436	
ILS Functions	RCP	CSS (Prime-Northrop Grum)	1.853	1.147	12/00	1.405	10/01	0.500	10/02		4.905	
ILS Functions	RCP	NRL Stennis	0.170	0.170	12/00						0.340	
ILS Functions	VAR	Various	0.191	0.406	12/00	0.125	10/01	0.148	10/02	0.025	0.895	
Subtotal ILS Functions			2.431	2.003		2.201		1.716		0.225	8.576	
Remarks:												
Total Cost			22.638	17.303		13.949		18.456		9.324	81.670	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Organic Airborne and Surface Influence Sweep/Q2427/Q2883					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		4.991	14.307	10.778	15.445	7.183	0.000	0.000	0.000	61.696
RDT&E Articles Qty				3						

A. Mission Description and Budget Item Justification

The Organic Airborne & Surface Influence Sweep (OASIS), formerly SWIMS, will provide a self-contained, high speed, multi-influence mine sweep capability, towed by the organic MH60S helicopter and potential surface craft.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 2001 ACCOMPLISHMENTS

- (U) (\$.949) Conducted evaluation of System Development & Demonstration (SD&D) contract proposals.
- (U) (\$1.136) Completed TEMP Development and conducted technical studies i.e. MH-60S Interface, Concept of Employment, Shock Analysis, C4I Interface, and Environment Analysis.
- (U) (\$2.906) (Cong Add) Conducted remote technical assistance to MCM ship .

2. (U) FY 2002 PLAN

- (U) (\$7.327) Obtain Milestone B approval. Award SD&D Contract for engineering design and Engineering Development Model (EDM) fabrication, and conduct PDR.
- (U) (\$2.519) Continue to conduct technical studies i.e. MH-60S Interface, C4I Interface, and Shock Analysis.
- (U) (\$1.686) Monitor Contractor performance and technical review of CDRLs.
- (U) (\$2.775) (Cong Add) Conduct remote technical assistance to MCM ship .

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N				PROJECT NAME AND NUMBER Organic Airborne and Surface Influence Sweep/Q2427/Q2883																																		
<p>3. (U) FY 2003 PLAN</p> <ul style="list-style-type: none"> - (U) (\$6.649) Continue SD&D contract to complete Design, Conduct CDR, Fabricate 3 EDM, and begin to integrate EDMs into platform. - (U) (\$4.129) Support platform integration. 																																							
<p>B. Other Program Funding Summary</p> <table border="0"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OASIS</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>9.240</td> <td>11.603</td> <td>29.264</td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table>											FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	OPN 424800										OASIS	0.000	0.000	0.000	0.000	9.240	11.603	29.264	CONT.	CONT.
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																														
OPN 424800																																							
OASIS	0.000	0.000	0.000	0.000	9.240	11.603	29.264	CONT.	CONT.																														
<p>C. Acquisition Strategy: After Milestone B review in FY02, a full and open competition is planned for the OASIS MH-60S SD&D program. In FY05, following a successful DT and MS C, the SD&D program will use OPN funding to procure three (3) Limited Rate Initial Procurement (LRIP) for fleet use. Full and open competition is planned for OASIS procurement in FY06 following FRPDR.</p>																																							
<p>D. Schedule Profile: See attached.</p>																																							

R-1 SHOPPING LIST - Item No. 115 - 15 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 15 of 26)

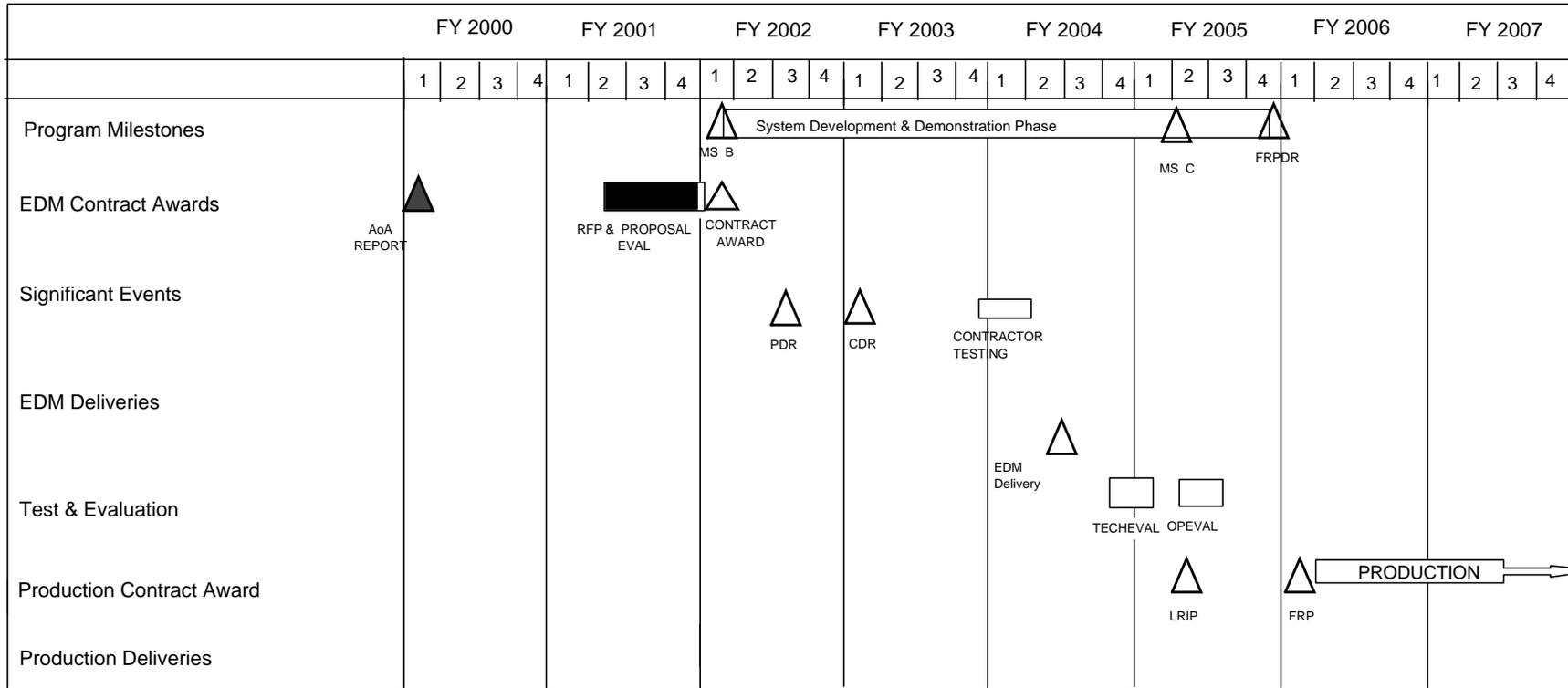
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Organic Airborne and Surface Influence Sweep/Q2427/Q2883

Organic Airborne and Surface Influence Sweep Schedule



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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 16 of 26)

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Organic Airborne and Surface Influence Sweep/Q2427/Q2883						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware/Software Development	C/CPFF	EDO Corp	1.722							0.000	1.722	
Hardware/Software Development	C/CPIF	UNKNOWN				2.200	10/01	1.300	10/02	2.018	5.518	
Hardware/Software Development	SS/CPFF	Aeptec Microsystems Inc Rockville, MD (Cong Add)		2.906	07/01	2.775				0.000	5.681	
Subtotal Hardware/Software Development			1.722	2.906		4.975		1.300		2.018	12.921	
Remarks:												
Engineering Services												
Engineering Services	C/CPIF	UNKNOWN				3.663	10/01	1.993	10/02	3.027	8.683	
Engineering Services	WR	CSS Panama City FL	4.237	1.116	10/00	1.659	10/01	2.281	10/02	1.912	11.205	
Engineering Services	WR	NSWC Carderock MD	0.300	0.120	10/00	0.305	10/01	0.000		0.000	0.725	
Engineering Services	VAR	VARIOUS	1.109	0.025	10/00	0.080	10/01			0.000	1.214	
Subtotal Engineering Services			5.646	1.261		5.707		4.274		4.939	21.827	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 17 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Organic Airborne and Surface Influence Sweep/Q2427/Q2883						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Management Support												
Management Support	VAR	Various	0.082	0.093	02/01	1.642	10/01	1.446	10/02	4.762	8.025	
Management Support		Travel	0.068	0.042		0.025		0.030		0.090	0.255	
Subtotal Management Support			0.150	0.135		1.667		1.476		4.852	8.280	
Remarks:												
Test & Evaluation Functions												
T&E Functions	C/CPIF	UNKNOWN				0.732	01/02	2.659	10/02	3.988	7.379	
T&E Functions	WR	CSS Panama City, FL	0.974	0.090	12/00	0.122	10/01	0.100	10/02	4.913	6.199	
T&E Functions	VAR	Various	0.200	0.354	11/00	0.000		0.000		0.000	0.554	
Subtotal Test & Evaluation Functions			1.174	0.444		0.854		2.759		8.901	14.132	
Remarks:												
ILS Functions												
ILS Functions	C/CPIF	UNKNOWN				0.732	01/02	0.664	10/02	1.033	2.429	
ILS Functions	WR	CSS Panama City, FL	0.300	0.204	10/00	0.372	10/01	0.305	10/02	0.885	2.066	
ILS Functions	VAR	Various		0.041	11/00					0.000	0.041	
Subtotal ILS Functions			0.300	0.245		1.104		0.969		1.918	4.536	
Remarks:												
Total Cost			8.992	4.991		14.307		10.778		22.628	61.696	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473/Q9069					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		9.654	21.693	21.961	36.722	17.678	10.872	0.000	0.000	133.551
RDT&E Articles Qty				2 -AMNS	2-RAMICS					

A. Mission Description and Budget Item Justification

There is currently no rapid airborne mine neutralization capability to support minehunting. The Airborne Mine Neutralization System (AMNS) research and development effort was restarted in FY97 in Project Q0529 P.E. 0604373N. AMNS will provide the MH-60S with the capability to neutralize bottom and moored mines using an airborne delivered, expendable mine neutralization device. The AMNS will first be tested on the MH-53E to prove out the neutralization effectiveness, then it will transition to the MH-60S for organic neutralization. The Rapid Airborne Mine Clearance System (RAMICS) program began in FY00. RAMICS will satisfy the U.S. Navy's need for a rapid mine clearance capability required to neutralize near-surface and surface (floating) moored sea mines. RAMICS will use geo-location data provided by other minehunting and mine reconnaissance systems, use a laser system to reacquire targets and to direct the fire of supercavitating projectiles that will render the mines inoperable. RAMICS includes the following major subsystems and components: (a) Subsystem (including gun and turret); (b) Munition Subsystem - MK258 Mod 1 Armor Piercing, Fin Stabilized, Discarding Sabot-Tracer (APFSDS-T) munition subsystem; (c) Targeting Sensor Subsystem; (d) Fire Control Subsystem; and (e) Software. The system will be deployed from the MH-60S helicopter and will provide organic airborne mine defense for Carrier Battle Groups (CVBG) and Amphibious Ready Groups (ARG). This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 2001 Accomplishments

- (U) (\$1.830) AMNS - Completed MH-53 TECHEVAL.
- (U) (\$2.514) AMNS - Prepared documentation for EMD MH-60S contract award and research warhead issues in preparation for Weapons System Explosive Safety Review Board.
- (U) (\$5.310) RAMICS – Continued Weapons System Definition/Selection, munitions testing.

2. (U) FY 2002 Plan

- (U) (\$11.047) AMNS - Award EMD contract, initiate design, develop software, and integrate aboard MH-60S for test and evaluation.
- (U) (\$ 1.800) AMNS - Conduct MH-53 OPEVAL.
- (U) (\$ 4.584) RAMICS – Complete ORD, complete Acquisition documentation and obtain MS B, award SD&D contract and initiate Design Phase including ILS and TDA engineering efforts. Complete 30mm Cannon risk reduction efforts including ground and flight firing mounted on the helicopter.

R-1 SHOPPING LIST - Item No. 115- 19 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 19 of 26)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																																																																		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER																																																																																				
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N				Airborne Mine Neutralization Systems/Q2473/Q9069																																																																																				
<p>2. (U) FY 2002 Plan (Cont'd)</p> <ul style="list-style-type: none"> - (U) (\$4.262) Cong Add - Investigate untethered airborne mine neutralization systems <p>3. (U) FY 2003 Plan</p> <ul style="list-style-type: none"> - (U) (\$11.668) AMNS - Continue design, develop software, and integrate aboard MH-60S for test and evaluation. - (U) (\$10.293) RAMICS – Continue design, development under SD&D contract. Complete PDR and CDR and initiate acquiring long-lead test articles. <p>B. Other Program Funding Summary</p> <table border="1"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AMNS</td> <td>0.000</td> <td>11.257</td> <td>3.569</td> <td>5.270</td> <td>6.800</td> <td>8.585</td> <td>16.947</td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>PANMC 0019600</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RAMICS</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.227</td> <td>0.690</td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>WPN 422500</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AMNS</td> <td>0.000</td> <td>0.000</td> <td>1.539</td> <td>1.567</td> <td>1.904</td> <td>1.933</td> <td>1.962</td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>RAMICS</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>10.762</td> <td>19.732</td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: AMNS : Procurement for eight (8) MH-53E systems FY02 - FY03 will be sole source to Lockheed Martin for MH-53E capability. Full and open competition is planned for the AMNS MH-60S EMD program. In FY04, following a successful DT and MS-C, a LRIP award is planned for three (3) MH-60S systems. FRPDR is planned for FY05.</p> <p>RAMICS: Following a Milestone B review in FY02, a full and open competition is planned for the RAMICS MH-60S SD&D program. Following a successful DT and MS-C in FY05 , a FY06 LRIP award is planned for two (2) systems for fleet use. FRPDR is FY06 with refurbishment of EDMs and full rate production occurring in FY07.</p> <p>D. Schedule Profile: See attached.</p>											FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	OPN 424800										AMNS	0.000	11.257	3.569	5.270	6.800	8.585	16.947	CONT.	CONT.	PANMC 0019600										RAMICS	0.000	0.000	0.000	0.000	0.000	0.227	0.690	CONT.	CONT.	WPN 422500										AMNS	0.000	0.000	1.539	1.567	1.904	1.933	1.962	CONT.	CONT.	RAMICS	0.000	0.000	0.000	0.000	0.000	10.762	19.732	CONT.	CONT.
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																																																																																
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AMNS	0.000	0.000	1.539	1.567	1.904	1.933	1.962	CONT.	CONT.																																																																																
RAMICS	0.000	0.000	0.000	0.000	0.000	10.762	19.732	CONT.	CONT.																																																																																

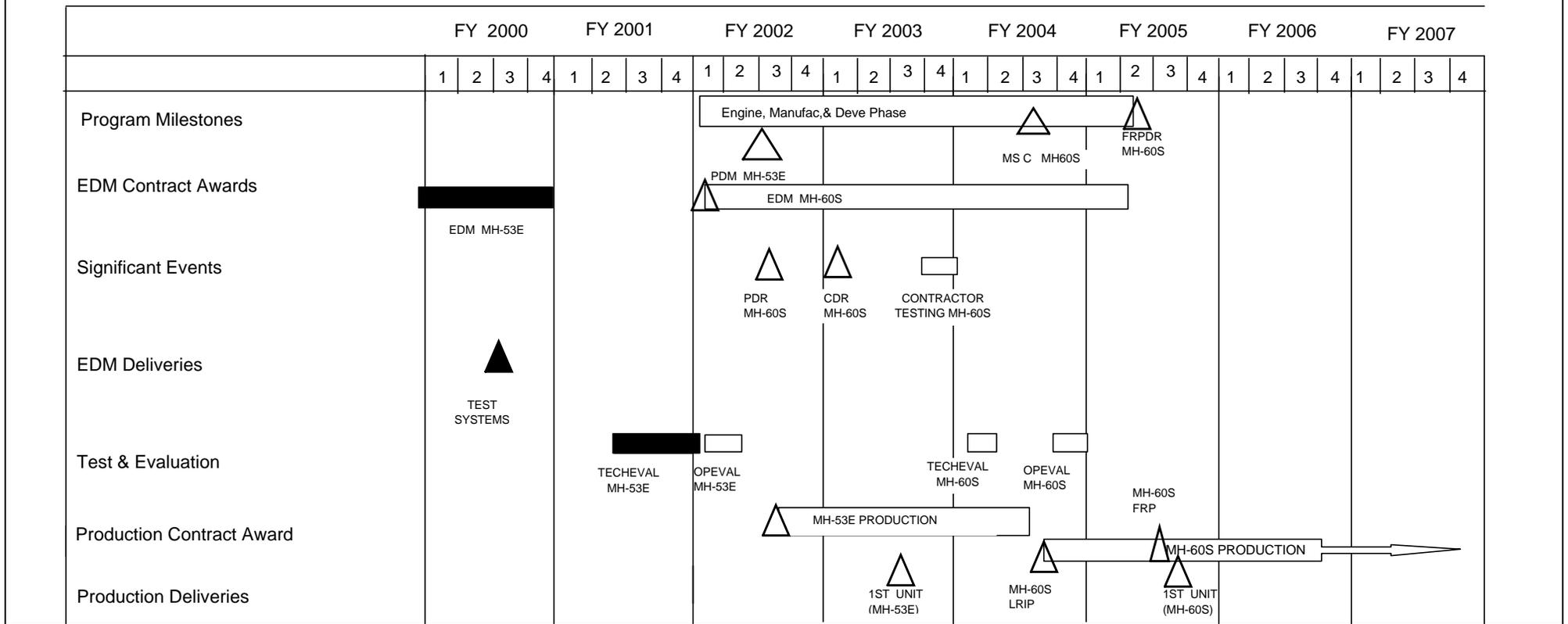
UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473/Q9069

Airborne Mine Neutralization System Schedule



R-1 SHOPPING LIST - Item No. 115 - 21 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 21 of 26)

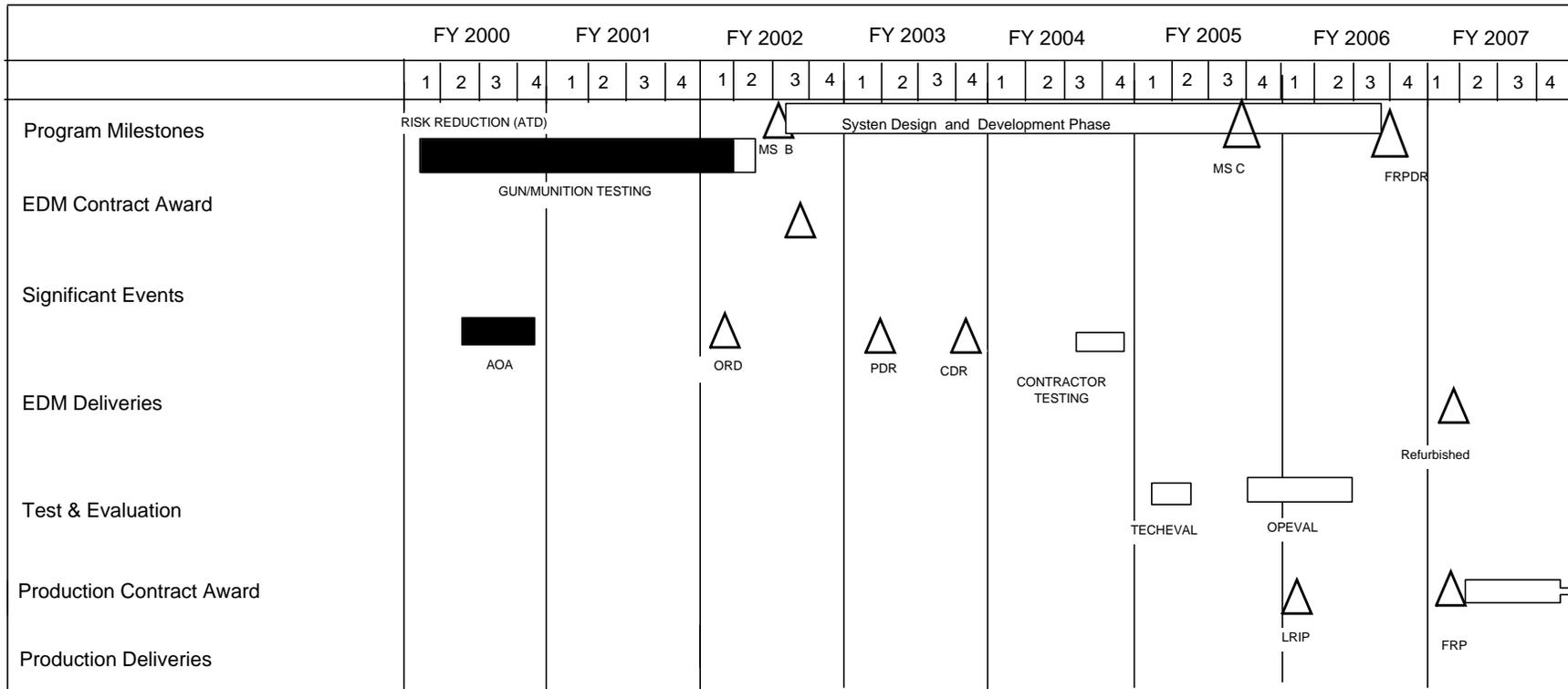
UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N	PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473/Q9069

Rapid Airborne Mine Clearance System Schedule



R-1 SHOPPING LIST - Item No. 115 - 22 of 115 - 26

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 22 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware/Software Development												
Hardware/Software Development	C/FP	LOCKHEED , Syracuse, NY	3.200	0.131	05/01					0.000	3.331	
Hardware/Software Development	VAR	VARIOUS	0.338							0.000	0.338	
Hardware/Software Development	C/CPIF	UNKNOWN				9.095	11/01	5.531	10/02	0.000	14.626	
Hardware/Software Development	WR	CSS Panama City, FL		0.290	06/01					0.000	0.290	
Subtotal Hardware/Software Development			3.538	0.421		9.095		5.531		0.000	18.585	
Remarks: This is for AMNS only												
Engineering Services												
Engineering Services	WR	CSS Panama City, FL	2.418	1.473	10/00	2.922	10/01	1.323	10/02	0.895	9.031	
Engineering Services	WR	VARIOUS	0.335	0.452	11/00	0.000		0.000		0.000	0.787	
Engineering Services	C/CPIF	UNKNOWN	0.000			1.434	11/01	0.549	10/02	0.456	2.439	
Subtotal Engineering Services			2.753	1.925		4.356		1.872		1.351	12.257	
Remarks: This is for AMNS only												

R-1 SHOPPING LIST - Item No. 115 - 23 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473Q9069						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Management Support												
Management Support	VAR	Various	0.016	0.128	11/00	0.548	10/01	0.504	10/02	0.243	1.439	
Management Support		Travel	0.024	0.040		0.040		0.040		0.080	0.224	
Subtotal Management Functions			0.040	0.168		0.588		0.544		0.323	1.663	
Remarks: This is for AMNS only												
Test & Evaluation Functions												
Test & Evaluation Functions	WR	CSS Panama City, FL	3.418	1.390	11/00	1.650	10/01	1.139	10/02	3.000	10.597	
Test & Evaluation Functions	C/FP	Lockheed , Syracuse, NY	0.000	0.157	01/01					0.000	0.157	
Test & Evaluation Functions	VAR	Various	0.300	0.283	11/00	0.150	10/01	0.275	10/02	0.254	1.262	
Test & Evaluation Functions	C/CPIF	UNKNOWN	0.000					1.139	10/02	2.250	3.389	
Subtotal Test & Evaluation Functions			3.718	1.830		1.800		2.553	10/02	5.504	15.405	
Remarks: This is for AMNS only												
ILS Functions		CSS Panama City, FL										
ILS Functions	WR	CSS Panama City, FL	0.312	0.000		0.635	10/01	0.584	10/02	0.243	1.774	
ILS Functions	C/CPIF	UNKNOWN	0.000			0.635	11/01	0.584	10/02	0.000	1.219	
Subtotal ILS Functions			0.312	0.000		1.270		1.168		0.243	2.993	
Remarks: This is for AMNS only												
Total Cost			10.361	4.344		17.109		11.668		7.421	50.903	
Remarks: This is for AMNS only												

R-1 SHOPPING LIST - Item No. 115 - 24 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware/Software Development												
Hardware/Software Development	C/CPIF	TBD				0.632	05/02	4.207	10/02	30.297	35.136	
Hardware/Software Development	Various	CSS Panama City, FL	0.725	0.307	11/00	0.202	10/01			0.000	1.234	
Subtotal Hardware/Software Development			0.725	0.307		0.834		4.207		30.297	36.370	
Remarks: This is for RAMICS only												
Engineering Services												
Engineering Services	Various	CSS Panama City, FL	2.644	1.452	10/00	0.578	10/01	1.066	10/02	0.000	5.740	
Engineering Services	Various	NSWC Crane	0.000	2.200	07/01					0.000	2.200	
Engineering Services	WR	VARIOUS	0.000	0.303	11/00	0.379	10/01	0.100	10/02	0.000	0.782	
Engineering Services	C/CPIF	TBD				0.553	05/02	1.224	10/02	8.127	9.904	
Subtotal Engineering Services			2.644	3.955		1.510		2.390		8.127	18.626	
Remarks: This is for RAMICS only												

R-1 SHOPPING LIST - Item No. 115 - 25 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473/Q9069						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Management Support												
Management Support	VAR	Various	0.357	0.305	10/00	0.570	10/01	0.913	10/02	8.641	10.786	
Management Support		Travel	0.024	0.030		0.034		0.021		0.231	0.340	
Subtotal Management Functions			0.381	0.335		0.604		0.934		8.872	11.126	
Remarks: This is for RAMICS only												
Test & Evaluation Functions												
Test & Evaluation Functions	WR	CSS Panama City, FL	0.610	0.000		0.320	10/01	0.000		1.177	2.107	
Test & Evaluation Functions	C/CPIF	TBD				0.052	05/02	0.082	10/02	0.391	0.525	
Test & Evaluation Functions	VAR	Various		0.643	12/00	1.234	10/01	1.232	10/02	2.316	5.425	
Subtotal Test & Evaluation Functions			0.610	0.643		1.606	10/01	1.314	10/02	3.884	8.057	
Remarks: This is for RAMICS only												
ILS Functions												
ILS Functions	WR	CSS Panama City, FL	0.250	0.070	11/00	0.030	10/01	0.139	10/02	0.049	0.538	
ILS Functions	C/CPIF	TBD	0.000			0.000		1.309	10/02	6.622	7.931	
Subtotal ILS Functions			0.250	0.070		0.030		1.448		6.671	8.469	
Remarks: This is for RAMICS only												
Total Cost			4.610	5.310		4.584		10.293		57.851	82.648	
Remarks: This is for RAMICS only												

R-1 SHOPPING LIST - Item No. 115 - 26 of 115 - 26

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 26 of 26)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Submarine System Equipment Development/0604503N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		69.685	64.547	98.516	69.075	86.148	64.684	62.218	CONT.	CONT.
Submarine Support Equipment/F0775		0.903	0.650	1.523	1.537	1.533	1.538	1.541	CONT.	CONT.
Submarine Sonar Improvement/F0219		58.517	56.948	64.601	40.778	42.833	32.621	36.487	CONT.	CONT.
Submarine Integrated Antenna Systems/X0742		5.719	2.860	17.757	21.342	33.667	25.612	21.368	CONT.	CONT.
Submarine Tactical Communications Systems/X1411		4.546	4.089	14.635	5.418	8.115	4.913	2.822	CONT.	CONT.
Quantity of RDT&E Articles		0	0	0	0	0	0	0		
<p>A. (U) Mission Description and Budget Item Justification: The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (ES) techniques and components, equipment, and systems that will increase submarine operational effectiveness in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for submarine ES to be effective in conducting the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime Protection, and Joint Strike.</p> <p>(U) The Submarine Sonar Improvement Program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21 and TRIDENT Class Submarines to maintain clear acoustic, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement.</p> <p>(U) The Submarine Integrated Antenna Systems project develops the antennas needed to communicate in networks such as Ultra High Frequency Satellite Communications, Extremely Low Frequency (ELF), Extremely High Frequency (EHF), Super High Frequency and Global Positioning System. Hardware developments include: (a) mast-mounted systems; (b) buoyant cable systems; (c) expendable buoy systems and (d) submarine antenna distribution systems.</p>										

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 31)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
		February 2002	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	Submarine System Equipment Development/0604503N		
<p>(U) The Submarine Tactical Communications Systems project provides attack submarines with an exterior communications system which: (a) minimizes the time required at communications depth; (b) enhances operability, reducing errors and manpower requirements; and (c) provides flexibility for low impact growth and change throughout the life of the submarine. Design efforts will provide increased antenna signal distribution and interconnection subsystems to accommodate ELF, EHF, and Mini-Demand Assigned Multiple Access and a message storage and processing subsystem.</p>			
	FY 2001	FY 2002	FY 2003
(U) FY 2002 President's Budget:	72.132	43.706	
(U) Appropriated Value:	72.801	65.206	
(U) Adjustment to FY2001/2002 Appropriated Value/FY2002 President's Budget Submit:	-3.116	-0.659	98.516
(U) FY 2003 President's Budget:	69.685	64.547	98.516
<p>(U) Change Summary Explanation:</p> <p>Funding: See individual program element summaries for specific data.</p> <p>Schedule: See individual program element summaries</p> <p>Technical: See individual program element summaries</p>			

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 31)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5	Submarine Spt Equipment Dev/0604503N				Submarine Support Equipment Program/F0775					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.903	0.650	1.523	1.537	1.533	1.538	1.541	CONT.	CONT.
RDT&E Articles Qty		0	0	0	0	0	0	0		

A. (U) Mission Description and Budget Item Justification: This program develops and improves techniques and components, equipment, and systems that will increase submarine operational effectiveness in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for Submarine Electronic Warfare Support Measures (ES) systems to be effective in conducting the following mission areas: Joint Littoral Warfare; Joint Surveillance, Space and Electronic Warfare and Intelligence Collection; Maritime Protection; and Joint Strike. Specific efforts include: (1) AN/BLQ-10 ES System software problem evaluation and resolution, (2) de-installation of the AN/BLQ-10 ES System EDM from the Developmental Test (DT)/Operational Test (OT) test platform and and restoration to pre-test ES configuration, (3) Engineering and Manufacturing Development of advanced technology transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770 and (4) Development of AN/BLQ-10 Tech Insertion of SIGINT threat emitter/carry-on equipment open architecture. The AN/BLQ-10 ES System problem evaluation will provide correction of system problems identified during Land Based Integration Testing (LBIT), DT/Operational Evaluation (OPEVAL) and Follow-on Test and Evaluation (FOT&E).

(U) Program Accomplishment and Plans:

1. (U) FY 2001 Accomplishments:

- (U) (\$.213) Performed AN/BLQ-10(V) ES System problem evaluation and resolution as a result of fleet operator feedback.
- (U) (\$.690) De-Installed AN/BLQ-10 ES System EDM from USS Annapolis test platform and restored to pre-test ES configuration (AN/WLR-8, AN/BRD-7 etc.).

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 31)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Spt Equipment Dev/0604503N	PROJECT NAME AND NUMBER Submarine Support Equipment Program/F0775																					
<p>2. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$.650) Develop software and hardware improvements associated with OPEVAL and ASSEP project F0770 transition. <p>3. (U) FY 2003 Plan:</p> <ul style="list-style-type: none"> - (U) (\$.273) Develop software and hardware improvements associated with ASSEP project F0770 transition. - (U) (\$ 1.250) Initiate development of AN/BLQ-10 Tech Insertion of SIGINT threat emitter/carry-on equipment open architecture. <p>(U) Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%;">FY 2001</th> <th style="width: 15%;">FY 2002</th> <th style="width: 20%;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: right;">0.933</td> <td style="text-align: right;">0.656</td> <td></td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: right;">0.942</td> <td style="text-align: right;">0.656</td> <td></td> </tr> <tr> <td>(U) Adjustment to FY2001/2002 Appropriated Value/FY2002 President's Budget:</td> <td style="text-align: right;">-0.039</td> <td style="text-align: right;">-0.006</td> <td style="text-align: right;">1.523</td> </tr> <tr> <td>(U) FY 2003 Pres Budget Submit:</td> <td style="text-align: right;">0.903</td> <td style="text-align: right;">0.650</td> <td style="text-align: right;">1.523</td> </tr> </tbody> </table>					FY 2001	FY 2002	FY 2003	(U) FY 2002 President's Budget:	0.933	0.656		(U) Appropriated Value:	0.942	0.656		(U) Adjustment to FY2001/2002 Appropriated Value/FY2002 President's Budget:	-0.039	-0.006	1.523	(U) FY 2003 Pres Budget Submit:	0.903	0.650	1.523
	FY 2001	FY 2002	FY 2003																				
(U) FY 2002 President's Budget:	0.933	0.656																					
(U) Appropriated Value:	0.942	0.656																					
(U) Adjustment to FY2001/2002 Appropriated Value/FY2002 President's Budget:	-0.039	-0.006	1.523																				
(U) FY 2003 Pres Budget Submit:	0.903	0.650	1.523																				

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 31)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA-5		Submarine Spt Equipment Dev/0604503N			Submarine Support Equipment Program/F0775					
<p>U) Change Summary Explanation: Funding:</p> <p>FY2001: Decrease of (-\$0.30K) is for minor adjustments, .7% Pro-Rata (-\$0.07K), Government-Wide Recissions (-\$0.02K). FY2002: Decrease of (\$0.06K) is due to Management Reform Initiatives. FY2003: Net increase of (\$0.871K) is due to N77 issue (+\$1,250K) to fund technology insertion for AN/BLQ-10 to address emerging SIGINT requirements and minor adjustments (-\$379K).</p> <p>Schedule: Not applicable</p>										
OPN Line 256000	AN/BLQ-10 688I/21 Backfit	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Complete	Cost
SSEP ML015		10.003	10.548	28.020	42.741	33.838	39.408	40.160	0.000	0.000
ML017	AN/BLQ-10 Fld Chg Kits	0.000	0.000	30.244	59.741	34.845	24.590	18.089	0.000	0.000
ML018	IEM Fld Change Kits	0.000	0.000	0.000	0.000	11.682	13.888	16.176	0.000	41.746
OPN Line 256005	SSN 688I/21 AN/BLQ-10 Installation									
PE 0204281N		0.765	1.925	2.897	1.605	13.463	18.637	15.769	0.000	0.000
SSEP ML5IN										
O&M,N										
PE 0702827N/Subhead 8B2B		1.815	1.982	1.712	1.869	1.690	1.727	1.787	CONT.	0.000
SSEP										
SCN LI 201300										
PE 0204287N		20.667	21.827	22.720	22.984	23.286	23.797	48.944	CONT.	0.000
Partial (AN/BLQ-10 ES Only)										

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 5 of 31)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Spt Equipment Dev/0604503N	PROJECT NAME AND NUMBER Submarine Support Equipment Program/F0775
<p>Related RDT&E: (U) PE 0603562N/Submarine Tactical Warfare System (U) PE 064558N/New SSN Combat Systems Development/Project F1950 (U) PE 064558N/New SSN Combat Systems Development/Project F2430</p> <p>C. (U) Acquisition Strategy: LRIP approved November 99 and Full rate production approved October 2000. Current efforts in this project consist of Product Improvements (Tech Insertion) to the AN/BLQ-10(V) ES system.</p> <p>D. (U) Schedule Profile: AN/BLQ-10 P3I Program Schedule attached.</p>		

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 6 of 31)

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Sys Equip Dev/0604503N			Submarine Support Equipment Program/F0775						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development												
IEM/HPI Interface	SS/CPIF	SENSYS Tech Newington,V	2.700							0.000	2.700	2.700
AN/BLQ-10 ES/IEM BDE EDMS	C/FFP	Lockheed Syracuse, NY	7.778							0.000	7.778	7.778
AN/BLQ-10 ES Product Improvement	SS/FFP	Lockheed Syracuse, NY	1.091	0.172	01/01	0.4030	12/01	0.417	12/02	CONT.	CONT.	CONT.
Ancillary Hardware Development												
Systems Engineering	WR	NUWC Newport, RI	4.534	0.690	10/00	0.195	10/01	0.195		CONT.	5.614	N/A
Miscellaneous	VARIOUS	VARIOUS	12.782	0.011	Var	0.052	Var	0.911	N/A	CONT.	CONT.	N/A
Licenses											0.000	N/A
Tooling											0.000	N/A
GFE (AN/UYQ-70 Displays)	C/FFP	Lockheed Eagan.MN	0.700							0.000	0.700	0.700
IEM ADSU EMD (EDMs)	C/CPIF/CPAF	E-Systems Goleta, CA	38.386							0.000	38.386	38.386
Award Fees	C/CPAF	E-Systems Goleta, CA	0.200							0.000	0.200	0.200
Subtotal Product Development			68.171	0.873		0.650		1.523		CONT.	CONT.	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Engineering Technical Services	C/CPIF	GRCI McLean, VA	2.700							0.000	2.700	2.700
Studies Analysis & Evaluations	MIPR	MITRE McLean, VA	1.000							0.000	1.000	1.000
GFE											.	
Subtotal Support			3.700	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 116

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 31)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Sys Equip Dev/0604503N			Submarine Support Equipment Program/F0775						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Management Support Services	C/CPAF	EG&G, Arlington, VA	0.292	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.292	0.292
Travel	TO's	Various	0.049	0.030	10/00	0.000	N/A	0.000	N/A	0.000	0.079	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.341	0.030		0.000		0.000		CONT.	CONT.	CONT.
Remarks:												
Total Cost			72.212	0.903		0.650		1.523		CONT.	CONT.	CONT.
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER Submarine Sys Equip Dev/0604503N			PROJECT NAME AND NUMBER Submarine Sonar Improvement/F0219					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		58.517	56.948	64.601	40.778	42.833	32.621	36.487	CONT.	CONT.
RDT&E Articles Qty		0	0	0	0	0	0	0		

A. (U) Mission Description and Budget Item Justification: This program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21 and TRIDENT Class Submarines to maintain clear acoustical, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing Acoustic Superiority issues through the rapid introduction of interim development products applicable to SSN 688, 688I Flight, SSN21, and SSBN 726 Class Submarines. A-RCI Phases I and II introduce towed array processing improvements; A-RCI Phase III introduces spherical array processing improvements. The AN/BSY-1 High Frequency Upgrade is a stand-alone program which will be introduced as A-RCI Phase IV for SSN 688I and Seawolf Class only and carries on to FY03. As part of CNO N872's plan to maintain acoustic superiority for In-Service Submarines a joint cooperative effort with NAVSEA (SEA 93, ASTO) to deliver annual Advanced Processing Builds (APBs). The capabilities in the APBs will be integrated as part of A-RCI certified systems. This effort, known as the N872 Business Plan funds the APB integration efforts with the Multi-Purpose Processor as well as the AN/BQQ-10 Sonar system beginning in FY02. This budget submit also reflects development of the Total Ship Monitoring System as well as Acoustic Intelligence (ACINT 21) capabilities to be introduced into the Fleet. Precision Bottom Mapping transition, integration and testing began in FY01. Towed systems development efforts will focus on: (a) tow cable improvements for shallow water towing in littoral environments; (b) hydrophone and telemetry cost and risk reduction initiatives; (c) mechanical endurance improvements; (d) TB-29 (A) towed array Engineering Developmental Model (EDM) development; and (e) Affordable Towed Array Technology. The TB-29(A) array will provide additional war fighting capability over the TB-23 at a reduced unit cost compared to the TB-29, through the use of Commercial Off The Shelf (COTS) telemetry, lower cost hydrophones, and fewer non-acoustic sensors. Affordable Towed Array Technology reduces Towed Array Total Ownership cost and provides improvements in Towed Array Reliability. AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines. AN/BSY-2 development also delivers a CCS MK2 Variant to the Seawolf Class.

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-5	Submarine Sys Equip Dev/0604503N	Submarine Sonar Improvement/F0219
<p>1. (U) FY 2001 Accomplishments:</p> <ul style="list-style-type: none">- (U) (\$11.508) Continued Advance Processing Build Sea Testing, Integration and Certification.- (U) (\$5.433) Complete development, Opeval and Techeval for A-RCI Phase III and IV.- (U) (\$25.000) Continued research, development, training, and deployment of the Multipurpose Processor- (U) (\$3.993) Continued development of TB-29 (A) Towed Array.- (U) (\$1.269) Began development of Affordable Towed Array Technology Initiatives- (U) (\$.900) Continued development for DTC Improvements.- (U) (\$6.914) Continued ARCI-(V)5 development and integration.- (U) (\$3.500) Continued Precision Bottom Mapping transition, integration and testing. <p>2. (U) FY 2002 Plan:</p> <ul style="list-style-type: none">- (U) (\$22.153) Continue Advance Processing Build Sea Testing, Integration and Certification.- (U) (\$21.310) Continue research, development, training, and deployment of the Multipurpose Processor- (U) (\$ 1.220) Complete development, Techeval and Opeval of TB-29 A Towed Array.- (U) (\$ 4.116) Continue development of Affordable Towed Array Technology Initiatives.- (U) (\$.900) Continue development for DTC Improvements.- (U) (\$4.749) Continue ARCI-(V)5 development, integration and test.- (U) (\$2.500) Continue Precision Bottom Mapping transition, integration and testing. <p>3. (U) FY 2003 Plan:</p> <ul style="list-style-type: none">- (U) (\$22.496) Continue Advance Processing Build Sea Testing, Integration and Certification.- (U) (\$ 5.203) Continue development of Affordable Towed Array Technology Initiatives.- (U) (\$.900) Continue development for DTC Improvements.- (U) (\$10.802) Continue ARCI-(V)5 development, integration and test.- (U) (\$2.500) Complete Precision Bottom Mapping transition, integration and testing.- (U) (\$5.500) Begin TSMS Development- (U) (\$9.200) Begin Acoustic Intercept- (U) (\$8.000) Development for SSGN's.		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER								
RDT&E, N/BA-5	Submarine Sys Equip Dev/0604503N	Submarine Sonar Improvement/F0219								
(U) Program Change Summary:										
		FY 2001	FY 2002		FY 2003					
FY 2002 President's Budget:		60.652	35.966							
FY2002 Appropriated Value:		61.214	57.466							
Adjustment to FY2001/2002 Appropriated Value/FY2002 President's Budget		-2.697	-0.518		64.601					
FY 2003 President's Budget Submit:		58.517	56.948		64.601					
(U) Change Summary Explanation:										
Funding:										
FY01 decrease of (-\$2.697M) was for SBIR reduction (-\$1.516M), .7% Pro-Rata (-\$0.429K) and (-\$0.752K).										
FY02: These changes reflect a Congressional Plus Up of \$21.5M for MPP development, Management Reform Initiatives (-\$0.508K), and misc decreases of \$0.10K).										
FY03: This budget includes realignment with RDT&E budget 0604503N (Project F0219). Funding has been realigned to RDT&E by reducing the FY03 A-RCI and OA-9070B Production quantities and by realigning AN/BSY-2 funding from SSN Acoustics, H2SA, SA101(9.2), SA102(1.8) and SA501(4.6) to Program Element 0604503N, F0219. Additional increase of \$8.0M is for improvements of Combat Systems on SSGN Conversions.										
Schedule: AN/BSY-2 TECHEVAL/OPEVAL has been completed. The ARCI TECHEVAL/OPEVAL schedule has been modified. These test events have been extended to the end of FY02. The TB-29A TECHEVAL/OPEVAL schedule has been modified. An LRIP III decision has been added in the third quarter of FY 02 and Milestone III has been rescheduled for the fourth quarter of FY 02.										
Technical: A-RCI increases technical capabilities over programs through the use of commercial off-the-shelf components, open system architecture, and leveraging advanced development efforts. AN/BSY-2 TECHEVAL/OPEVAL has been completed.										
B. (U) Other Program Funding Summary										
		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Cost
OPN BLI 214700/05		112.031	118.258	251.909	328.469	216.647	242.030	290.233	CONT.	CONT.
RELATED RDT&E:										
PE 0604524N (Submarine Combat Systems)										
PE 0604558N (New SSN Combat Systems Development)										
PE 0604561N (SSN-21 Development)										
PE 0604562N (Submarine Tactical Warfare System (ENG))										

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	February 2002
RDT&E, N/BA-5	Submarine Sys Equip Dev/0604503N	Submarine Sonar Improvement/F0219
<p>C. (U) Acquisition Strategy: The TB-29(A) was developed and manufactured under the US Navy Towed Systems Omnibus contract, awarded in FY99 to Lockheed Martin Integrated Systems, Bethesda, MD using full and open competition. This flexible contract vehicle will be used by submarine, surface ship, and surveillance towed system program offices. The contract is planned to take advantage of economies of scale in development and manufacturing and to encourage the use of commonality among all Navy towed systems. A Low-Rate Initial Production (LRIP) approval was granted for TB-29 (A) and contract was awarded in FY00. A second Low-Rate Initial Production (LRIP) approval was granted for TB-29 (A) and contract was awarded in the second quarter FY01. An Operational Evaluation (OPEVAL) on a SSN688 or SSN688I platform is planned in FY02 to support a Milestone III Release to Fleet (RTF) decision for TB-29(A).</p> <p>A-RCI utilizes an open architecture and Commercial Off-the-Shelf products in support of new and upgraded sonar systems. A sole source cost plus award fee contract was awarded to Lockheed Martin Federal Systems and Digital System Resources. Program Review with Milestone Decision Authority was conducted in December 1999 granting approval for the FY00 production option.</p> <p>A Sole Source Cost Plus Award Fee with multiple option years ending in FY 2001 was awarded to Lockheed Martin, Syracuse in 1996. A one year contract extension is currently being negotiated followed by a new sole source contract with Lockheed Martin Corporation.</p> <p>D. (U) Schedule Profile: See attached schedules.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

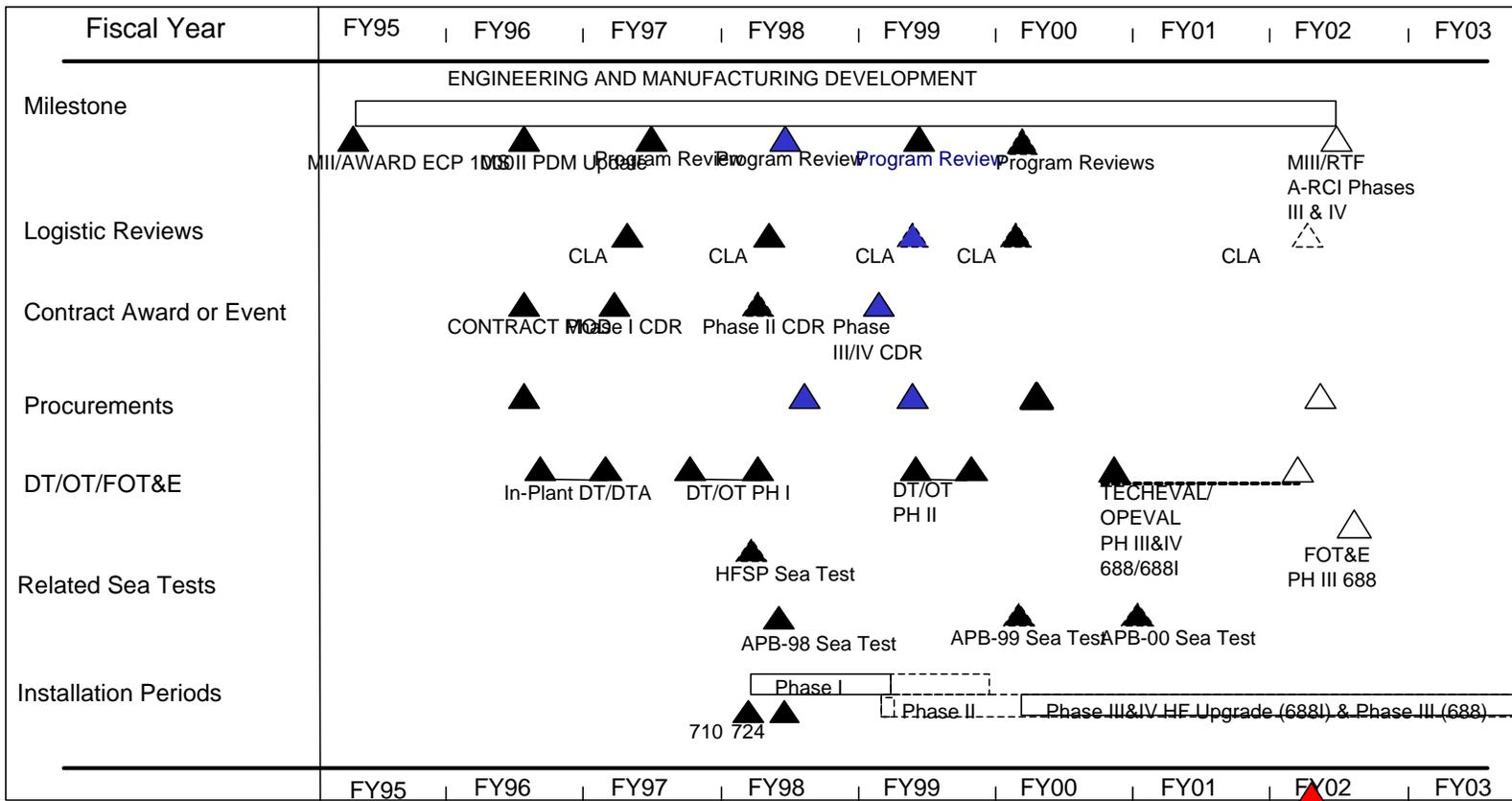
PROJECT NAME AND NUMBER

RDT&E, N/BA-5

Submarine Sys Equip Dev/0604503N

Submarine Sonar Improvement/F0219

A-RCI MASTER PROGRAM SCHEDULE



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NOW Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

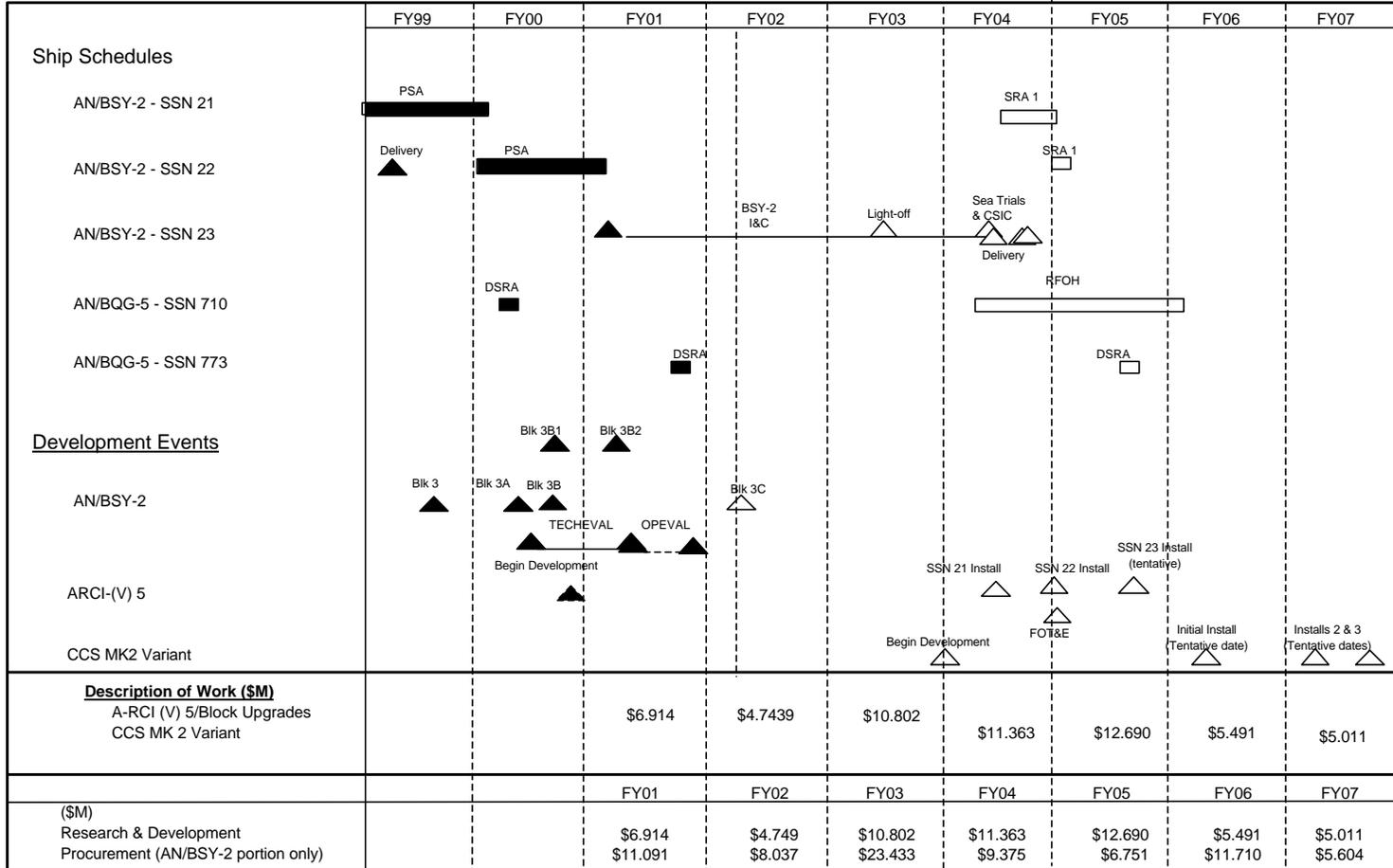
PROJECT NAME AND NUMBER

RDT&E, N/BA-5

Submarine Sys Equip Dev/0604503N

Submarine Sonar Improvement/F0219

E. (U) Schedule Profile:



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Exhibit R-2a, RDT&E Project Justification

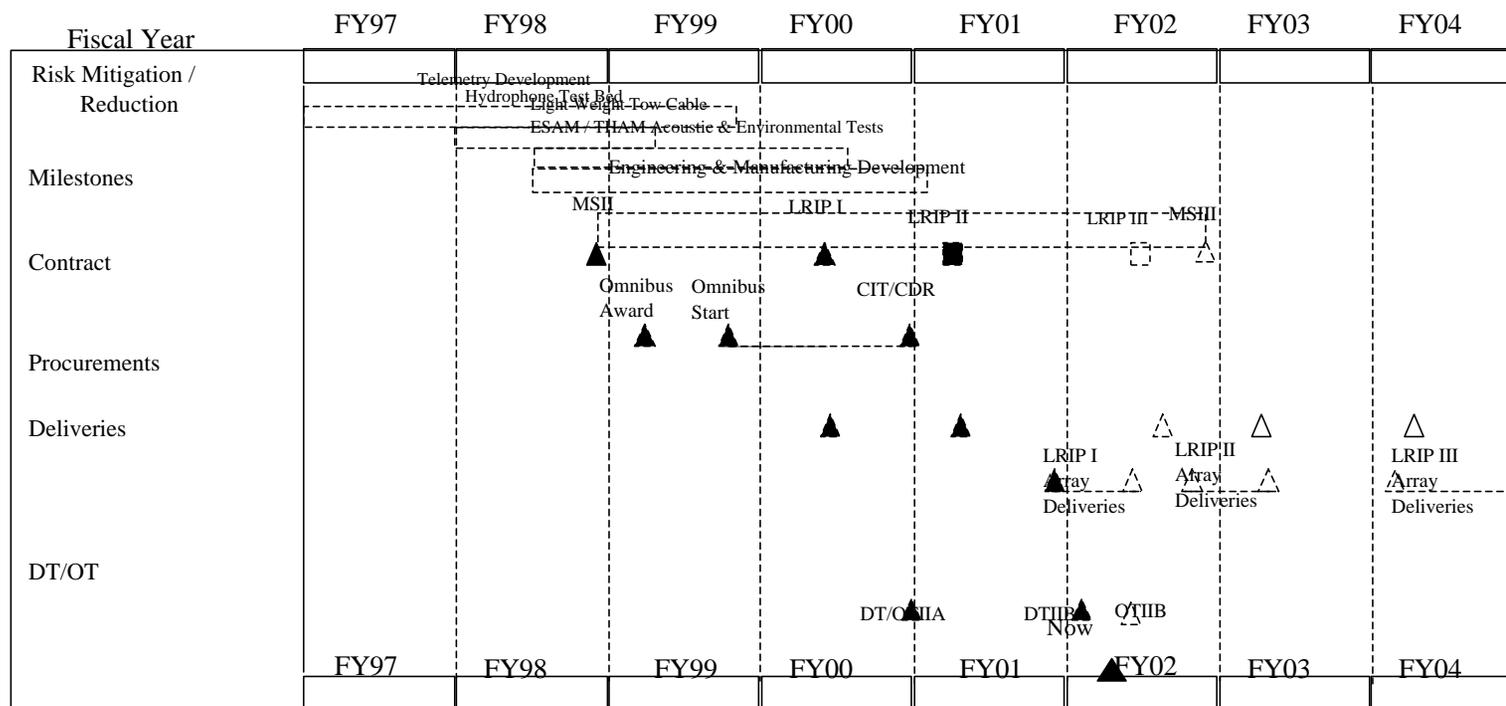
(Exhibit R-2a, page 15 of 31)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Sys Equip Dev/0604503N	PROJECT NAME AND NUMBER Submarine Sonar Improvement/F0219

TB-29A PROGRAM SCHEDULE



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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 16 of 31)

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-688 and Trident Modernization/0604503N			Submarine Sonar Improvement/F0219						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	C/Various	Lockheed Martin (OMNIBUS)	10.959	2.928	N/A	0.250	N/A	0.000	N/A	CONT.	CONT.	33.485
Primary Hardware Development	SS/Various	Chesapeake Science	4.891	0.000	N/A	2.589	N/A	4.123	N/A	CONT.	CONT.	12.620
Primary Hardware Development	SS/CPAF	Lockheed Manassas, VA	78.660	9.578	N/A	8.803	N/A	17.000	N/A	CONT.	111.286	137.476
Ancillary Hardware Development											0.000	
Systems Engineering	WR	NUWC Newport, RI	66.251	7.827	10/00	6.771	10/01	7.896	10/01	CONT.	CONT.	N/A
Systems Engineering	SS/CPAF	LMC, Syracuse	3.875	1.566	N/A	0.000	N/A	0.000	N/A	CONT.	CONT.	N/A
Systems Engineering	Various	Various	9.627	2.408	N/A	24.106	N/A	7.490	N/A			
Miscellaneous	Various	TBD						11.927		CONT.	CONT.	
Miscellaneous	Various	Various	7.123	2.299	N/A	2.549	N/A	3.849	N/A	CONT.	CONT.	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees	SS/CPAF	Lockheed, Syracuse NY	0.385	0.110	N/A	0.000	N/A	0.000	N/A	CONT.	CONT.	N/A
Subtotal Product Development			181.771	26.716		45.068		52.285		CONT.	CONT.	
<p>Remarks: Maximum award fee budgeted for LMC, Syracuse contract averages 10% of the value placed on contract. Maximum award fee budgeted for Lockheed Martin Federal Systems contract averages 12% of the value placed on contract</p> <p>10/1/96 - 3/31/97 received a rating of outstanding and 100% award . 4/1/97 - 9/30/97 received a rating of outstanding and 100% award. 10/1/97 - 3/31/98 received a rating of above average and 80% award. 4/1/98 - 9/30/98 received a rating of outstanding and 100% award.</p> <p>10/1/98 - 3/31/99 received a rating of outstanding and 100% award 4/1/99 - 9/30/99 received a rating of Outstanding and 100% award. 10/1/99 - 3/31/00 received a rating of Outstanding and 100% award. 4/1/01 - 9/30/01 received a rating of outstanding and 100% award.</p>												
Development Support Equipment											0.000	
Primary Software Development	SS/CPAFF	Digital Systems Resources,VA	45.300	29.800	N/A	10.000	N/A	10.000	N/A	CONT.	95.100	102.892
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			45.300	29.800		10.000		10.000		CONT.	95.100	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-688 and Trident Modernization/0604503			Submarine Sonar Improvement/F0219						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Developmental/Operational T&E	Various	Various	4.427	1.224	N/A	0.987	N/A	1.500	N/A	CONT.	CONT.	N/A
Tooling											0.000	
GFE											0.000	
Subtotal T&E			4.427	1.224		0.987		1.500		CONT.	CONT.	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Management Support Services	Various	Various	2.059	0.702	N/A	0.718	N/A	0.641	N/A	CONT.	CONT.	N/A
Travel	PD	NAVSEA	0.435	0.075	N/A	0.175	N/A	0.175	N/A	CONT.	CONT.	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			2.494	0.777		0.893		0.816		CONT.	CONT.	
Remarks:												
Total Cost			233.992	58.517		56.948		64.601		CONT.	CONT.	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 31)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N				PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742				
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		5.719	2.860	17.757	21.342	33.667	25.612	21.368	CONT.	CONT.
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. (U) Mission Description and Budget Item Justification: The Submarine Integrated Antenna System (SIAS) project provides for the development and testing of submarine antennas designed to track and meet emerging submarine communications requirements: (a) Improve frequency coverage and data rate capabilities of submarine antennas and their interface to the External Communications System (ECS), (b) Improve submarine antenna performance and Data Rate while the submarine is operating at speed and depth, (c) Provide antenna compatibility with new waveforms and receiver equipment, and (d) Improve the stealth capability of existing and future antennas and (e) Improve antenna design to reduce Total Ownership Cost. This project funds research and development for submarine antennas including (1) P3I efforts to existing antennas including OE-538/BRC Multi-Function Antenna improved UHF (iUHF) gain and RFDACS efforts and the OE-562 Submarine High Data Rate (SubHDR) development of K-band capability and system design changes for integration on OHIO class submarines, (2) Development of new antenna systems including Advanced High Data Rate Antenna (AdvHDR) and (3) Communication at Speed and Depth design efforts. These efforts will provide SSN, SSBN and SSGN platforms with an improved communications capability while operating at speed and depth thus enhancing operational flexibility and maintaining stealth in Littoral mission applications.

(U) Program Accomplishments and Plans:

1. (U) FY 2001 Accomplishments:

- (U) (\$0.337) OE-538/RFDACS - Continued development for design changes required for submarine automated RF path management for OHIO Integrated Radio Room (IRR).
- (U) (\$0.382) Antenna Transition Engineering - Continued development of UHF SATCOM 3dB antenna gain. Continued development of OE-538 iUHF capability. Continued to perform program definition and risk reduction for the next generation submarine antenna systems. Performed technology and SATCOM assessments and system configuration option evaluation for the AdvHDR mast.
- (U) (\$5.000) Congressional Plus-up funding was provided to improve UHF systems and provide higher data rate communications with the objective to enable global connectivity across all submarine missions in accordance with network centric doctrine.

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742
<p>2. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$0.362) OE-538/RFDACS - Complete development and testing of OE-538/RFDACS for OHIO class integration. - (U) (\$0.793) Advanced HDR/SubHDR P3I - Perform trade off analysis to investigate application of new capabilities such as Ku/Ka-band coverage upgrade to SubHDR P3I or follow-on AdvHDR system. Initiate program definition and performance specifications to develop system requirements to meet broadband frequency coverage for communications multi-functionality and higher data rates over existing antennas at periscope depth while maintaining SSN, SSGN, and SSBN stealth objectives. - (U) (\$1.705) Antenna Transition Engineering - Provide continued program definition, system specifications, and risk reduction to the next generation antenna systems for planned FY03 program starts, AdvHDR, and Advanced Bouyant Cable (AdvBCA). Continue tracking Satellite Communications (SATCOM) (WGF/Advanced Wideband System (AWS)/Advanced Narrowband Plan (ANS)/Advanced Extremely High Frequency (AdvEHF) and Line-of-Sight (LOS) (UAV)/Unmanned Underwater Vehicle (UUV)/Unmanned Ground Sensor (UGS) connectivity operational capability requirements for translation into system performance specifications for acquisition. Continue technology performance and maturity assessment for new system baselines and rapid insertion potential to upgrade current antenna systems for support of emerging SATCOM circuits to meet evolving fleet requirements. <p>3. (U) FY2003 Plan:</p> <ul style="list-style-type: none"> - (U) (\$2.723) Antenna Transition Engineering - Provide continued program definition, system specifications, and risk reduction to the next generation antenna systems for planned FY03 EMD program starts of AdvHDR and AdvBCA. Continue technology performance and maturity assessment for rapid insertion potential to upgrade current antenna systems for support of emerging SATCOM circuits to meet evolving fleet requirements. - (U) (\$8.279) SubHDR for OHIO - Develop the HDR antenna and associated equipment design changes required for integration of the SubHDR antenna into OHIO class submarines. - (U) (\$6.606) K-band Upgrade for SubHDR - Develops the design changes to the SubHDR antenna that will enable the antenna to access the K-band and interface with WGS SATCOM system or the Common Data Link in support of the UAV/UUV operations. - (U) (\$0.149) Communications at Speed and Depth- Performs assessment of enabling technologies (i.e., buoyant cable ,towed, and expendable buoy systems, with RF, acoustics and laser communication payloads) that will provide the submarine the ability to communicate at speed and depth. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		February 2002
RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742
B. (U) Program Change Summary:		
	FY 2001	FY2002
(U)FY 2002 President's Budget:	5.896	2.885
(U)Appropriated Value:	5.951	
Adjustment to FY2001/2002 Appropriated Value/FY2002	-0.232	-0.025
President's Budget Submit		17.757
(U)FY2003 President Budget:	5.719	2.860
		17.757
(U) Change Summary Explanation:		
Funding: N/A		
1) FY 2001 decrease (-\$0.142K) is SBIR Assessment, (-\$0.19K) is Economic Assumption reduction, and(- \$0.71K) for Navy miscellaneous adjustments.		
2) FY 2002 decrease of (-\$.025) is based on Management Reform Initiative.		
3) FY 2003 decrease of \$(-0.109K) is based on Management Reform Initiative.		

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/BA-5

PROGRAM ELEMENT NAME AND NUMBER

SSN 688 & Trident Modernization/0604503N

PROJECT NAME AND NUMBER

Submarine Integrated Antenna System/X0742

Schedule:

- 1) OE-538/BRC: RFDAC ACU Variant will begin installations with the OE-538 multi-function mast in FY03.

Technical: N/A

C. (U) Other Program Funding Summary:

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
	77.137	88.487	132.874	112.804	187.351	166.106	154.141	CONT.	CONT.

OPN Line 3130 Hardware and 31305 Installation (Full)

RELATED RDT&E:

PE 0602232N (Space and Electronic Warfare (SEW) Technology)

PE 0303109N (Satellite Communications) – Provides for the EHF transmitter and receiver that utilizes the antenna developed under this program.

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/BA-5

PROGRAM ELEMENT NAME AND NUMBER

SSN 688 & Trident Modernization/0604503N

PROJECT NAME AND NUMBER

Submarine Integrated Antenna System/X0742

D. (U) Acquisition Strategy:

FY 2001

FY 2002

FY 2003

Program
Milestones

3Q HDR MSIII

Engineering
Milestones

T&E
Milestones

4Q OE-538 FOTE

Contract
Milestones

3Q HDR (FRP)

E. (U) Schedule Profile: See paragraph C above.

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 23 of 31)

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Exhibit R-3 Cost Analysis (page 1)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Integrated Antenna System/X0742						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development											0.000	
Hardware Development (UHF)	WX	NUWC Newport, RI	2.082	5.227	Various	0.365	Various	0.370	Various	CONT.	CONT.	CONT.
Hardware Development (Ka/Ku)	CPFF	Raytheon Marlboro, MA						4.424	Jan - 03	CONT.	CONT.	CONT.
Software Development (Ka/Ku)	CPFF	Raytheon Marlboro, MA						0.342	Jan - 03	CONT.	CONT.	
Hardware Development (Ohio - HDR)	CPFF, WX	NSWC						3.311	Jan - 03	CONT.	CONT.	
H/W Proc/Design (Ohio - HDR)	CPFF, WX	NSWC						4.698	Jan - 03	CONT.	CONT.	
Systems Engineering	WX	NUWC Newport, RI	2.243	0.391	Various	2.328	Various	3.737	Various	CONT.	CONT.	CONT.
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			4.325	5.618		2.693		16.882		CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support	Various	Various	0.255	0.000	Various	0.000	Various	0.000	Various	CONT.	CONT.	CONT.
Configuration Management											0.000	
Technical Data	Various	Various									0.000	
GFE											0.000	
Subtotal Support			0.255	0.000		0.000		0.000		CONT.	CONT.	CONT.
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 31)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N				Submarine Integrated Antenna System/X0742					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Developmental/Operational T&E	Various	Various	1.223	0.000	Various	0.000	Various	0.000	Various	CONT.	CONT.	CONT.
Tooling											0.000	
GFE											0.000	
Subtotal T&E			1.223	0.000		0.000		0.000		CONT.	CONT.	CONT.
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	0.674	0.101	Various	0.167	Various	0.875	Various	CONT.	CONT.	CONT.
Management Support Services											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.674	0.101		0.167		0.875		CONT.	CONT.	CONT.
Remarks:												
Total Cost			6.477	5.719		2.860		17.757				
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA-5	SSN 688 & Trident Modernization/0604503N				Submarine Tactical Communication System/X1411				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost- FMB Control	4.546	4.089	14.635	5.418	8.115	4.913	2.822	CONT.	CONT.
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. (U) Mission Description and Budget Item Justification: The Submarine Tactical Communications System project provides submarines with communications systems designed to: (a) enhance data throughput through automation and integrated network management; (b) copy tactical data networks, (c) provide submarines IP connectivity; (d) be interoperable with other U.S. and allied military networks; and (e) improve reliability, maintainability, and availability. This is accomplished by providing the submarine with a properly integrated mix of Navy standard and commercial off-the-shelf communication equipment covering a wide range of frequencies and modes. This project includes the Submarine Communications Support System (SCSS) which provides a system engineering approach for the design and evaluation of wideband and narrowband modernization plans. This project includes the follow-on program to SCSS, the Common Submarine Radio Room (CSRR). CSRR will leverage the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) and install the VIRGINIA ECS on all classes of submarines. In support of the CSRR, funding is provided to expedite the Navy standard Multi-functional Crypto System (MCS) to meet CSRR need dates. The project provides for the development of a single Land-Based Integration and Test Facility that will consolidate existing Land -Based Testing Facilities into one facility that will support all classes of submarines. This project funds the development of a replacement of the Multi-Link Transmit Simulator (MLTS) to support future testing and training requirements. The project includes system engineering efforts associated with demonstration of new technology which will allow the submarine to be a participant in battle group and joint operations. The new technology will increase the submarine's communications, command, and control capability and interoperability with the rest of the Navy and exploits its stealth capabilities for battlefield dominance. This project also provides funds to integrate Singleton and Satellite Link 11 into the SCSS and the transition to a Tactical Data Link.

(U) Program Accomplishments and Plans:

1. (U) FY 2001 Accomplishments:

- (U) (\$4.277) SCSS – Complete design, integration and TECHEVAL for SCSS Continue design of CSRR and started development of Multi-functional Crypto System (MCS).
- (U) (\$0.269) Submarine Tactical Data Link (STD L) – Continued integration and development testing for STD L .

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2002																								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER																									
RDT&E, N/BA-5	SSN 688 & Trident Modernization/0604503N	Submarine Tactical Communication System/X1411																									
<p>2. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$1.599) CSRR – Complete design on baseline architecture of CSRR. - (U) (\$1.150) CSRR - Begin OHIO unique hardware interface development including platform hull, mechanical and electrical interfaces. Also begin unique OHIO software development. - (U) (\$0.500) MCS - Continue development of Multi-functional Crypto System (MCS). - (U) (\$0.840) Complete OPEVAL of SCSS on Los Angeles class submarine <p>3. (U) FY 2003 Plan:</p> <ul style="list-style-type: none"> - (U) (\$2.185) CSRR - Continue design and integration efforts of CSRR for OHIO Class submarines. - (U) (\$2.500) CSRR -Begin Integration and Certification of Integration Test Facility. - (U) (\$2.300) CSRR -Complete development of unique OHIO software. - (U) (\$1.350) Begin development of MLTS replacement. - (U) (\$0.800) Complete testing and certification of MCS. - (U) (\$4.500) Begin the CSRR conversion of the TRIDENT Land-Based Evaluation Facility into a CSRR configuration which will support all classes of submarines. - (U) (\$1.000) Begin system engineering to implement BCA/OPCON architecture. <p>B. (U) Program Change Summary:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY2002</th> <th style="text-align: center;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>FY 2002 President's Budget:</td> <td style="text-align: center;">4.651</td> <td style="text-align: center;">4.199</td> <td></td> </tr> <tr> <td>(U) FY 2002 Appropriated Value:</td> <td style="text-align: center;">4.694</td> <td></td> <td></td> </tr> <tr> <td>Adjustment to FY2001/2002 Appropriated Value/ FY 2002</td> <td style="text-align: center;">-0.148</td> <td style="text-align: center;">-0.110</td> <td style="text-align: center;">14.635</td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget:</td> <td style="text-align: center;">4.546</td> <td style="text-align: center;">4.089</td> <td style="text-align: center;">14.635</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation:</p> <p>Funding: N/A</p> <ol style="list-style-type: none"> 1) FY 2001 decrease of (-\$0.048K) for SBIR, (-\$0.33K .7% Pro-Rat), (-\$0.10K Government-Wide Rescission), and(- \$.057K Navy miscellaneous reduction. 2) FY 2002 decrease of (-\$0.036K) for Management Reform Initiative and(-\$0.074K) for FFRDC. 3) FY 2003 decrease of (-\$0.112K) for SYSCOM Contractor Support. 					FY 2001	FY2002	FY 2003	FY 2002 President's Budget:	4.651	4.199		(U) FY 2002 Appropriated Value:	4.694			Adjustment to FY2001/2002 Appropriated Value/ FY 2002	-0.148	-0.110	14.635	(U) FY 2003 President's Budget Submit:				(U) FY 2003 President's Budget:	4.546	4.089	14.635
	FY 2001	FY2002	FY 2003																								
FY 2002 President's Budget:	4.651	4.199																									
(U) FY 2002 Appropriated Value:	4.694																										
Adjustment to FY2001/2002 Appropriated Value/ FY 2002	-0.148	-0.110	14.635																								
(U) FY 2003 President's Budget Submit:																											
(U) FY 2003 President's Budget:	4.546	4.089	14.635																								

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 27 of 31)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/BA-5

PROGRAM ELEMENT NAME AND NUMBER

SSN 688 & Trident Modernization/0604503N

PROJECT NAME AND NUMBER

Submarine Tactical Communication System/X1411

Schedule: N/A

Technical: N/A

C. (U) Other Program Funding Summary:

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
	77.137	88.487	132.874	112.804	187.351	166.106	154.141	CONT.	CONT.

OPN Line 3130 Hardware and 31305 Installation (Full)

RELATED RDT&E:

PE 0204163N (Fleet Communications)

PE 0602232N (Space & Electronic Warfare (SEW) Technology)

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Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 28 of 31)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Tactical Communication System/X1411
<p>C. (U) Acquisition Strategy: SCSS provides the system engineering and integration for the N77/N6 narrowband and wideband modernization plans on SSN 688 Class submarines. CSRR transforms SSN 688, SSBN 726, and SSN 21 Class radio room from suites of class-specific, closed system equipment to the VIRGINIA Class ECS which incorporates OSA communications equipment. The SCSS and OHIO SCSS programs are combined to provide the funding required to implement CSRR on all classes of submarines.</p> <p>CSRR will: Leverage off VIRGINIA Class ECS design. Use VIRGINIA Class ECS control and management software. Apply a systems approach to design and implementation of JMCOMS. Maximize use of COTS products and emerging technologies.</p>		
	<u>FY 2001</u>	<u>FY2002</u>
Program Milestones		<u>FY2003</u>
Engineering Milestones	(STD L) 1Q LBSRR DT-I	
T&E Milestones	(SCSS) 2Q TECHEVAL DT-IIA (SCSS) 4Q OPEVAL (LBSRR) OT-IIA	(SCSS) 2/3Q OPEVAL (SSN OT-IIA)
Contract Milestones	(STD L) 1Q NCTSI Certification (STD L) 2/3Q OPEVAL (at sea) (STD L) 4Q Operational Test	(CSRR) 3/4 Q DT

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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Tactical Communication System/X1411						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development											0.000	
Hardware Development*	CPFF	SSC-SD San Diego, CA	1.900	0.500		0.000	TBD	0.000	TBD		2.400	
Hardware Development**	CPFF	SSCs/NUWC Newport, RI				0.211	TBD	2.000	TBD	Cont.	Cont.	Cont.
MCS Development	Various	Motorola, misc labs		0.212	Various	0.515	TBD	0.706				
H/W development/Facilities	Various	NUWC Newport, RI						4.375				
Software Development	CPFF	SSC-SD San Diego, CA	1.100	0.315		0.348	TBD	2.200	TBD	2.000	5.963	
Software Development	WX	NUWC Newport, RI	4.000	1.235	Various	0.263	TBD	0.000	TBD	Cont.	Cont.	Cont.
Ancillary Hardware Development						0.386	TBD				0.386	
Systems Engineering	Various	Misc Labs	3.848	0.850	Various	0.666	Various	1.000	Various	Cont.	Cont.	Cont.
Site Platform Integration/Certification Licenses								2.397			2.397	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			10.848	3.112		2.389		12.678		Cont.	Cont.	Cont.
Remarks: * SCSS Development for SSN688 Class submarines ** CSRR Development for OHIO class submarines												
Development Support Equipment *								1.050	TBD		1.050	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support			0.000	0.000		0.000		0.190		0.000	0.190	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		1.240		0.000	1.240	
Remarks: * Supports the development of the Multi-Link Training Simulator replacement												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 30 of 31)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N				Submarine Tactical Communication System/X1411					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Developmental/Operational T&E	Various	Various	2.775	0.855	Various	0.900	Various	0.000	Various	Cont.	Cont.	Cont.
Tooling											0.000	
GFE											0.000	
Subtotal T&E			2.775	0.855		0.900		0.000		Cont.	Cont.	Cont.
Remarks: Delays in platform availability resulted in shifting SCSS OPEVAL 2 Qtrs into FY02												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	2.311	0.579	Various	0.800	Various	0.717	Various	Cont.	Cont.	Cont.
Management Support Services											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			2.311	0.579		0.800		0.717		Cont.	Cont.	Cont.
Remarks:												
Total Cost			15.934	4.546		4.089		14.635				
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604504N, Air Control Engineering					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost			13.793	12.708	4.951	6.465	3.643	2.889	2.929	Continuing	Continuing
W0718 MARINE AIR TRAFFIC CONTROL AND LANDING SYSTEMS (MATCAL)			9.856	7.988	1.668	1.194	0.914	0.916	0.901	Continuing	Continuing
W0993 SHIPBOARD AIR TRAFFIC CONTROL SYSTEMS			1.705	2.389	2.973	4.961	2.382	1.580	1.582	Continuing	Continuing
W1657 SHORE AIR TRAFFIC CONTROL SYSTEMS			2.232	2.331	0.310	0.310	0.347	0.393	0.446	Continuing	Continuing
Quantity of RDT&E Articles	3										3
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element provides for the development, integration, and testing of automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing capabilities ashore and afloat. Funded programs are required to upgrade or replace aging ATC and approach/landing equipment on aircraft, aircraft carriers, amphibious ships, Naval Air Stations, Marine Corps Air Stations and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites. Development of a Global Positioning System (GPS) data link is required to enable the transfer of precise positioning information between ships and aircraft.</p> <p>(U) B. JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p> <p>NOTE: Realignment of costs from W1657 to W0993 for FY 2003 through FY 2007 reflect an administrative restructuring of various developmental projects in order to promote more efficient administration. The new alignment also more clearly delineates two product lines: one for shipboard ATC systems (W0993) and the other for shore ATC systems (W1657). This was a zero sum restructuring.</p>											

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCAL)					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			9.856	7.988	1.668	1.194	0.914	0.916	0.901	Continuing	Continuing
RDT&E Articles Qty	2										2

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operation and improved flight safety of Air Traffic Control and Landing Systems (ATC&LS) at Navy/Marine Corps (MC) expeditionary airfields. Current program includes approved transition to Phase I for the Air Surveillance and Precision Approach Radar Control System (ASPARCS). ASPARCS Phase II is for the Preplanned Product Improvements (PPIs).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (7.820) Continued to provide systems integration, incremental funding for the First Article and demonstrate the Air Surveillance Radar and the Precision Approach Radar Subsystem in the ASPARCS.
- (U) (1.964) Performed systems integration engineering in support of systems engineering functions for the ASPARCS. This effort included assistance in test and evaluation, and technical oversight of the ASPARCS program.
- (U) (.072) Continued management support to the program office for the development of the ASPARCS.

2. FY 2002 PLANS:

- (U) (4.072) Final incremental funding for the First Article to provide systems integration and demonstration of the Air Surveillance Radar and the Precision Approach Radar System (ASPARCS).
- (U) (1.534) Perform systems integration engineering in support of systems engineering functions for the ASPARCS. This effort will include assistance in test and evaluation, Developmental Testing (DT) and technical oversight of the ASPARCS program.
- (U) (2.000) Development of Transportable Transponder Landing System (TTLS).
- (U) (.140) Continue management support to the program office for the development of the ASPARCS.
- (U) (.242) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. FY 2003 PLANS:

- (U) (1.528) Perform systems integration engineering in support of systems engineering functions for the ASPARCS. This effort will include assistance in test and evaluation, DT and technical oversight of the ASPARCS program.
- (U) (.140) Continue management support to the program office for the development of the ASPARCS.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																											
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCAL)																																												
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">(U) FY 2002 President's Budget:</td> <td style="text-align: center;">9.291</td> <td style="text-align: center;">8.058</td> <td></td> <td colspan="2"></td> </tr> <tr> <td style="padding-left: 20px;">(U) Adjustments from the FY 2002 President's Budget:</td> <td style="text-align: center;">0.565</td> <td style="text-align: center;">-0.070</td> <td></td> <td colspan="2"></td> </tr> <tr> <td style="padding-left: 20px;">(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">9.856</td> <td style="text-align: center;">7.988</td> <td style="text-align: center;">1.668</td> <td colspan="2"></td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 20px;">(U) Funding: The FY 2001 net increase of \$.565 million consists of a \$.845 million increase for the ASPARCS offset by a \$.243 million decrease for a Small Business Innovation Research (SBIR) assessment and a \$.037 million decrease for the reprioritization of requirements within the Navy. The FY 2002 net decrease of \$.070 million reflects a \$.001 million increase for APSARCS integration efforts and a \$.071 decrease for an undistributed congressional reduction.</p> <p style="margin-left: 20px;">(U) Schedule: DT and OT slippage due to Congressional direction to fund the TTLS in FY 2002.</p> <p style="margin-left: 20px;">(U) Technical: Not Applicable</p> <p style="margin-top: 20px;">(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> </tr> </thead> <tbody> <tr> <td>OPN BLI 281500, MATCAL</td> <td style="text-align: center;">3.637</td> <td style="text-align: center;">0.991</td> <td style="text-align: center;">14.318</td> <td style="text-align: center;">15.938</td> <td style="text-align: center;">16.343</td> <td style="text-align: center;">16.652</td> <td style="text-align: center;">17.013</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table>						<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>			(U) FY 2002 President's Budget:	9.291	8.058				(U) Adjustments from the FY 2002 President's Budget:	0.565	-0.070				(U) FY 2003 President's Budget Submit:	9.856	7.988	1.668			<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	OPN BLI 281500, MATCAL	3.637	0.991	14.318	15.938	16.343	16.652	17.013	Continuing
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	February 2002
(U) D. ACQUISITION STRATEGY: Air Surveillance and Precision Approach Radar System (ASPARCS), a ACAT IVT program, will replace the legacy ATC Precision Approach Radar (PAR), an Air Surveillance Radar (ASR), and an Operation Subsystem/Communications Subsystem (OS/CS) with a HMMWV based PAR, ASR and OS/CS system. Lockheed Martin was awarded the Phase I effort in June of 2000. This effort included First Article development (Fixed Price Incentive) with (Firm Fixed Priced) production options.		
	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones		<u>FY 2003</u>
		<u>TO COMPLETE</u>
(U) Engineering Milestones	2Q/01 CDR (ASPARCS)	4Q/03 MSIII (ASPARCS)
(U) T&E Milestones		4Q/02-1Q/03 DT (ASPARCS)
(U) Contract Milestones		2Q/03 OT (ASPARCS)

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604504N, Air Control Engineering				W0718 Marine Air Traffic Control and Landing System (MATCAL)					
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
Primary Hardware Development	C/FFP	Lockheed Martin	3.000	7.486	11/00	3.320	11/01			4.196	18.002	18.002
Systems Engineering	WX	NAWCAD S.I.	2.391	1.123	11/00	1.448	11/01				4.962	
MATCAL Related Program Dev	SS/FFP	Rockwell Collins		0.424	04/01						0.424	0.424
TTLS	FFP	ANPC				2.000	05/02				2.000	2.000
Subtotal Product Development			5.391	9.033		6.768				4.196	25.388	
Remarks: Lockheed Martin cost to complete is for the Phase II portion of the program.												
Training Development	WX	NAWCAD S.I.		0.100	11/00	0.075	11/01			Continuing	Continuing	
Integrated Logistics Support	WX	NAWCAD S.I.		0.191	10/00	0.045	10/01				0.236	
Configuration Management	WX	NAWCAD S.I.	0.205	0.100	11/00	0.048	11/01				0.353	
Technical Data	WX	NAWCAD S.I.		0.200	11/00	0.194	11/01				0.394	
MATCAL Support	WX	NAWCAD S.I.	0.205								0.205	
Subtotal Support			0.410	0.591		0.362				Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCALs)					
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	NAWCAD S.I.				0.286	10/01	1.353	11/02	0.532	2.171	
Operational Test & Evaluation	WX	MCOTEA	0.056	0.126	11/00	0.160	11/01	0.145	11/02	0.211	0.698	
Subtotal T&E			0.056	0.126		0.446		1.498		0.743	2.869	
Remarks: MCOTEA cost to complete is for Phase II testing.												
Program Management Support	WX	NAWCAD S.I.		0.072	07/01	0.140	11/01	0.140	11/02	Continuing	Continuing	
Travel	WX	NAVAIR	0.017	0.034	10/00	0.030	10/01	0.030	11/02		0.111	
SBIR Assessment						0.242					0.242	
Subtotal Management			0.017	0.106		0.412		0.170		Continuing	Continuing	
Remarks:												
Total Cost			5.874	9.856		7.988		1.668		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604504N, Air Control Engineering				W0993, Shipboard Air Traffic Control Systems					
COST (\$ in Millions)		Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.705	2.389	2.973	4.961	2.382	1.580	1.582	Continuing	Continuing
RDT&E Articles Qty		1									1
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Air Traffic Control Centers, using versions of the AN/TPX-42(V) Direct Altitude and Identity Readout system (DAIR), identify, marshal, and direct aircraft within a 50 Nautical Mile (NM) radius. At closer range (8 NM) a ship's Automatic Carrier Landing System (ACLS) and Independent Landing Monitor (ILM) are operationally required to effect safe landing on the moving decks of ships. The ACLS and ILM provide precise automatic control and verification of aircraft during their final approach and landing sequence. Due to acquisition limitations in rain, the Moving Target Detection (MTD) technology used in the AN/SPN-46 is being adapted for the AN/SPN-43 search surveillance radar and in the AN/SPN-35B precision approach radar. The insertion of MTD technology plus an antenna pedestal upgrade constitute the AN/SPN-35C upgrade. This AN/SPN-35C configuration will also require development of an interface with the Battle Force Tactical Trainer (BFTT). The AN/SPN-46 radar currently functions in cooperation with an active beacon on the controlled aircraft, and this beacon has an obsolescence problem. Passive Point Source (PPS) development will replace the beacon, if proven successful. Other performance upgrades to the AN/SPN-46 include a rearchitecture of its Unit 19 processor, replacement of the AN/AYK-14 hardware and software, as well as various Engineering Change Proposals to improve system accuracy, availability and supportability. In recent years, the top 25% of the AN/SPN-43 frequency band has been reallocated to the Fixed Wireless Access community. Since the Navy requires an air traffic control radar, this project unit will include engineering efforts to identify requirements and develop a suitable replacement before the AN/SPN-43 becomes operationally ineffectual. Finally, The AN/TPX-42A(V)14 DAIR will undergo several phased upgrades that will eventually result in the AN/TPX-42B(V)15 version. System improvements include replacing militarized front-end equipment in the track processor with COTS technology, converting the operational program software to the more commonly used and flexible 'C' language, and integrating a flat panel monitor into the AN/UYQ-70 console. Some of the performance upgrades to the AN/SPN-46(V) and the AN/TPX-42A(V) mentioned above were previously funded under project unit W1657 but will now be funded with this project unit beginning in FY 2003. The efforts involving the AN/SPN-46(V) are referred to collectively in the W1657 exhibit as "ACLS Improvements". The realignment of all shipboard ATC system improvements from W1657 (formerly titled Air Traffic Control Improvements) to this related project W0993 will more clearly differentiate the separate product lines for ship and shore-based ATC systems, and will facilitate more efficient management of their respective programs. The realigned costs are as follows: FY 2003 - \$2.080 million; FY 2004 - \$2.125 million; FY 2005 - \$1.728 million; FY 2006 - \$1.712 million; FY 2007 - \$1.689 million.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p style="margin-left: 40px;">1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (.749) Continued systems engineering, design and development of AN/SPN-43 MTD. (U) (.325) Developed AN/SPN-35C/Battle Force Tactical Trainer interface. (U) (.300) Completed development of technical documentation for AN/SPN-35C. (U) (.161) Initiated development of AN/SPN-46 Power Monitor engineering change. (U) (.150) Initiated development of AN/SPN-46 Test Support Fixtures. (U) (.020) Completed systems engineering and test & evaluation for Passive Point Source for AN/SPN-46. 											

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	February 2002
3. FY 2002 PLANS: (U) (.197) Complete development of AN/SPN-46 Test Support Fixtures ECP. (U) (.203) Complete development of AN/SPN-46 Power Monitor ECP. (U) (.903) Complete shipboard testing (DT-IIC), OPEVAL support, and safety certification for AN/SPN-35C. (U) (1.014) Complete development of AN/SPN-43 MTD. (U) (.072) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638. 4. FY 2003 PLANS: (U) (1.125) Continue flight testing with the redesigned AN/SPN-46 Unit 19 module. (U) (.065) Complete OPEVAL support for AN/SPN-35C. (U) (.900) Initiate development of an AN/SPN-43 replacement or upgrade. (U) (.883) Continue testing of AN/TPX-42 Track Processor.		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems			
(U) B. PROGRAM CHANGE SUMMARY:										
			<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget:			1.776	2.410						
(U) Adjustments from the President's Budget:			-0.071	-0.021						
(U) FY 2003 President's Budget Submit:			1.705	2.389	2.973					
CHANGE SUMMARY EXPLANATION:										
(U) Funding: The FY 2001 decrease of \$.071 million includes a reduction of \$.047 million for reprioritization of requirements within the Navy and a reduction of \$.024 million for a Small Business Innovative Research assessment. The FY 2002 decrease of \$.021 million is for an undistributed Congressional reduction.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
	<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 283200	Automatic Carrier Landing Sys	17.421	15.399	17.447	17.870	17.062	18.449	19.071	Continuing	Continuing
OPN BLI 283100	Shipboard Air Traffic Control	7.701	7.923	7.815	8.023	8.038	8.282	8.448	Continuing	Continuing
Related RDT&E:										
	(U) P.E. 0603512N	(Carrier Systems Development)								
	(U) P.E. 0604512N	(Shipboard Aviation Systems)								

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<p>(U) D. ACQUISITION STRATEGY: The AN/SPN-35C upgrade acquisition will consist of several commercial procurements that will be integrated by the NAWCAD into the final configuration. Four primary contracts will be used, with CLINs for a base year and four options. In addition, several miscellaneous or ancillary hardware requirements will also be required that will take the form of small purchases, to be made from the open market (for items such as cables, connectors and backshells).</p> <p>All other projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce these technology advancements that either satisfy user requirements, such as all weather operation, or address supportability and cost of ownership problems.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> <th style="width: 25%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">(U) Program Milestones</td> <td>3Q-4Q/01 SPN-35C Documentation Release</td> <td></td> <td>3Q/03 SPN-35C Milestone III Decision</td> <td>3Q/04 TPX-42 Track Processor Production</td> </tr> <tr> <td></td> <td>4Q/01 SPN-35C BFTT Specification Release</td> <td></td> <td>2Q/03 SPN-46 Test Fixtures Production (see * NOTE)</td> <td>4Q/05 Complete SPN-46 H/W and S/W Upgrade (AYK-14)</td> </tr> <tr> <td></td> <td>4Q/01 PPS Production Decision</td> <td></td> <td>2Q/03 SPN-46 Power Monitor Production (see ** NOTE)</td> <td>TBD SPN-43 Replacement production decision & start</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>2Q/04 ACLS Unit 19 Mod Kit Production</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>2Q/06 SPN-46 Computer (AYK-14) Mod Kit Production</td> </tr> <tr> <td style="vertical-align: top;">(U) Engineering Milestones</td> <td>4Q/01 SPN-46 Test Support Fixtures PECP & Prod. Prototype</td> <td>3Q/02 Complete SPN-46 Test Support Fixtures ECP *</td> <td></td> <td></td> </tr> <tr> <td></td> <td>4Q/01 SPN-46 Power Monitor PECP and Prototype</td> <td>3Q/02 Complete SPN-46 Power Monitor ECP **</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>4Q/02 Complete SPN-43 MTD Development</td> <td></td> <td></td> </tr> </tbody> </table> <p>* NOTE: SPN-46 Test Support Fixtures are a one-of-a-kind test apparatus that meets the unique requirements of the ACLS Land Based Test Facility at Patuxent River, MD.</p> <p>** NOTE: SPN-46 Power Monitor and X-band Calibration engineering changes will be introduced into production of the PIP field change beginning in FY 2003.</p>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	3Q-4Q/01 SPN-35C Documentation Release		3Q/03 SPN-35C Milestone III Decision	3Q/04 TPX-42 Track Processor Production		4Q/01 SPN-35C BFTT Specification Release		2Q/03 SPN-46 Test Fixtures Production (see * NOTE)	4Q/05 Complete SPN-46 H/W and S/W Upgrade (AYK-14)		4Q/01 PPS Production Decision		2Q/03 SPN-46 Power Monitor Production (see ** NOTE)	TBD SPN-43 Replacement production decision & start					2Q/04 ACLS Unit 19 Mod Kit Production					2Q/06 SPN-46 Computer (AYK-14) Mod Kit Production	(U) Engineering Milestones	4Q/01 SPN-46 Test Support Fixtures PECP & Prod. Prototype	3Q/02 Complete SPN-46 Test Support Fixtures ECP *				4Q/01 SPN-46 Power Monitor PECP and Prototype	3Q/02 Complete SPN-46 Power Monitor ECP **					4Q/02 Complete SPN-43 MTD Development		
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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems		
(U) E. SCHEDULE PROFILE CONTINUED:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) T&E Milestones	3Q/01 Complete PPS Testing	2Q/02 Complete SPN-46 Test Support Fixtures testing 2Q/02 Complete SPN-46 Pwr Monitor Prototype testing 3Q/02 Complete SPN-35C DT-IIC Testing 4Q/02 Complete SPN-43 MTD testing	3Q/03 SPN-35C OPEVAL	1Q/04 Complete ACLS Unit 19 flight test & ILS documentation 2Q/04 TPX-42 Track Processor system test completed TBD SPN-43 Replacement test events
(U) Contract Milestones				

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604504N, Air Control Engineering				W0993, Shipboard Air Traffic Control Systems					
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
Primary Hardware Development	WR	NAWCAD Pax River MD	24.029	1.574	11/00	1.374	11/01	0.900	11/02	Continuing	Continuing	
Subtotal Product Development			24.029	1.574		1.374		0.900		Continuing	Continuing	
Remarks:												
Training Development	Compet. (T&M)	Various		0.060	12/00	0.060	12/01	0.090	12/02	Continuing	Continuing	
Subtotal Support				0.060		0.060		0.090		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems					
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	WR	NAWCAD Pax River MD	1.419	0.020	11/00	0.666	11/01	1.665	11/02	Continuing	Continuing	
Subtotal T&E			1.419	0.020		0.666		1.665		Continuing	Continuing	
Remarks:												
Program Management Support	Various	NAVAIR & NAWCAD Pax	0.866	0.051	11/00	0.217	11/01	0.318	11/02	Continuing	Continuing	
SBIR Assessment						0.072					0.072	
Subtotal Management			0.866	0.051		0.289		0.318		Continuing	Continuing	
Remarks:												
Total Cost			26.314	1.705		2.389		2.973		Continuing	Continuing	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			2.232	2.331	0.310	0.310	0.347	0.393	0.446	Continuing	Continuing
RDT&E Articles Qty	NOT APPLICABLE										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for engineering development, integration, adaptation, and testing of new and/or modernized real-time Air Traffic Control (ATC) systems, air navigational aids, landing systems, and ATC communications systems for Navy and Marine Corps Air Stations and air traffic control facilities including Fleet Area Control and Surveillance Facility (FACSFAC) worldwide. These systems are critical to Naval Aviation and provide for safe, efficient air operations. Additionally the FAA is effecting major modernization of the National Airspace System (NAS); e.g.; transitioning from radar-based to space-based technology, usage of digital technology in communications, display, etc. The Navy must maintain compatibility in order to ensure seamless interoperability within the NAS. NAS modernization initiatives in Project W1657 include the Visual Information Display System (VIDS), as well as studies and RDT&E efforts for Pre-planned Product Improvements for TACAN and Precision Approach Radar (PAR) equipment through 2025. Prior to FY 2003 this project unit also funded shipboard projects involving Automatic Carrier Landing System (ACLS) and AN/TPX-42A(V) Direct Altitude and Identity Readout (DAIR) performance upgrades. These upgrades include computer hardware and software processing improvements to various components in the AN/SPN-46(V) ACLS and AN/TPX-42A(V) DAIR systems. Efforts involving the AN/SPN-46(V) have been referred to collectively as "ACLS Improvements", which include the Unit 19 and IT-21 upgrade projects. The realignment of all shipboard ATC system improvements from this project to the related project W0993 (Carrier Air Traffic Control) will more clearly differentiate the separate product lines for ship and shore-based ATC systems, and will facilitate more efficient management of their respective programs. The realigned costs are as follows: FY 2003 - \$2.080 million; FY 2004 - \$2.125 million; FY 2005 - \$1.728 million; FY 2006 - \$1.712 million; FY 2007 - \$1.689 million.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (1.283) Continued development of AN/TPX-42 track processor and associated software upgrade prototype. (U) (.652) Continued development and testing of ACLS Improvements upgrade. (U) (.148) Continued engineering development for the Visual Information Display System. (U) (.149) Continued initial development efforts associated with Next-Generation Landing Systems. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> (U) (.894) Continue development and testing of ACLS Improvements upgrade. (U) (1.076) Initiate integration of Track Processor into AN/TPX-42 system and began testing. (U) (.145) Continue engineering development of the Visual Information Display System. (U) (.145) Continue initial development efforts associated with Next-Generation Landing Systems. (U) (.071) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638. 											

R-1 SHOPPING LIST - Item No. 117

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems
<p>2. FY 2003 PLANS:</p> <ul style="list-style-type: none">(U) (.155) Begin development of pre-planned product improvements for the Visual Information Display System.(U) (.078) Start initial development efforts associated with Fiber Optic Intersite System upgrade.(U) (.077) Start initial development efforts for Next Generation Communication System Upgrade.		

R-1 SHOPPING LIST - Item No. 117

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604504N, Air Control Engineering			W1657, Shore Air Traffic Control Systems				
(U) B. PROGRAM CHANGE SUMMARY:									
		<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget:		2.327	2.352						
(U) Adjustments from the President's Budget:		-0.095	-0.021						
(U) FY 2003 President's Budget Submit:		2.232	2.331	0.310					
 CHANGE SUMMARY EXPLANATION:									
(U) Funding: FY 2001 reduction of \$.095 million includes \$.075 million for reprioritization of requirements within the Navy and \$.020 million for a Small Business Innovative Research assessment. The FY 2002 decrease of \$.021 million is for an undistributed Congressional reduction.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
 (U) C. OTHER PROGRAM FUNDING SUMMARY:									
	<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>
	OPN BLI 284000 National Air Space System	30.035	21.496	20.000	30.748	31.162	35.802	28.727	Continuing
	OPN BLI 284500 Air Station ATC Equip	6.499	7.316	7.012	7.815	7.704	7.838	8.001	Continuing
	OPN BLI 284600 Microwave Landing System	4.966	5.334						0.000
	OPN BLI 284700 FACS FAC	4.183	1.135	4.356	4.539	4.620	4.719	4.819	Continuing
	OPN BLI 283100 Shipboard Air Traffic Contr	7.701	7.923						
	OPN BLI 283200 ACLS	17.421	15.399						
 Related RDT&E: Not Applicable									

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems																															
<p>(U) D. ACQUISITION STRATEGY: All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent user requirements or address supportability and cost of ownership problems.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> <th style="width: 25%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>2Q/01 VIDS Software Production Development</td> <td>3Q/02 VIDS Production Decision</td> <td>VIDS P3 I (Pre-planned Product Improvement)</td> <td>VIDS P3 I (Pre-planned Product Improvement)</td> </tr> <tr> <td></td> <td>2Q/01 TPX-42 Computer Upgrade Production</td> <td>2Q/02 IT21 insertion into SPN-46 PIP production</td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>3Q/01 TPX-42 Track Proc. Production Prototype</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>2Q/02 VIDS Developmental Testing - 2</td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	2Q/01 VIDS Software Production Development	3Q/02 VIDS Production Decision	VIDS P3 I (Pre-planned Product Improvement)	VIDS P3 I (Pre-planned Product Improvement)		2Q/01 TPX-42 Computer Upgrade Production	2Q/02 IT21 insertion into SPN-46 PIP production			(U) Engineering Milestones	3Q/01 TPX-42 Track Proc. Production Prototype				(U) T&E Milestones		2Q/02 VIDS Developmental Testing - 2			(U) Contract Milestones				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																													
(U) Program Milestones	2Q/01 VIDS Software Production Development	3Q/02 VIDS Production Decision	VIDS P3 I (Pre-planned Product Improvement)	VIDS P3 I (Pre-planned Product Improvement)																													
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(U) Engineering Milestones	3Q/01 TPX-42 Track Proc. Production Prototype																																
(U) T&E Milestones		2Q/02 VIDS Developmental Testing - 2																															
(U) Contract Milestones																																	

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604504N, Air Control Engineering				W1657, Shore Air Traffic Control Systems						
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	
Primary Hardware Development	WR	NAWCAD Pax River MD	36.713	1.849	11/00	1.705	11/01			Continuing	Continuing		
Primary Hardware Development	WR	SPAWARCEN Chasn SC	0.328	0.148	11/00	0.145	11/01	0.310	11/02	Continuing	Continuing		
Systems Engineering	WR	SPAWARCEN S.Diego CA	0.050	0.094	11/00	0.145	11/01					0.289	
Primary Hardware Development	WR	NAWCTSD Orlando FL	0.075									0.075	
Subtotal Product Development			37.166	2.091		1.995		0.310		Continuing	Continuing		
Remarks:													
Training Development	Cmp/TM	Apex Technology	0.060	0.030	01/01	0.030	01/02					0.120	0.120
Subtotal Support			0.060	0.030		0.030						0.120	
Remarks:													

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems					
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	WR	NAWCAD Pax River MD	2.456								2.456	
Subtotal T&E			2.456								2.456	
Remarks:												
Program Management Support	Various	NAVAIR & NAWCAD Pax	2.854	0.111	11/00	0.235	11/01			Continuing	Continuing	
SBIR Assessment						0.071					0.071	
Subtotal Management			2.854	0.111		0.306				Continuing	Continuing	
Remarks:												
Total Cost			42.536	2.232		2.331		0.310		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05					R-1 ITEM NOMENCLATURE ENHANCED MODULAR SIGNAL PROCESSOR (EMSP)/ 0604507N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		0.833	1.004	0.513	1.335	1.341	1.353	1.323	CONT.	CONT.
Enhanced Modular Signal Processor/Q1440		0.833	1.004	0.513	1.335	1.341	1.353	1.323	CONT.	CONT.
Quantity of RDT&E Articles										
<p>A. Mission Description and Budget Item Justification: The objective of this Program Element (PE) is to improve Navy Signal Processing Hardware and Software capabilities.</p> <p>PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 Accomplishments:</p> <p>(\$0.428) Via the Peer Review Process (PRP), completed preliminary design of a Common COTS signal processing solution for the DDG51 AN/SQQ-89 Surface ASW Combat System, CV-TSC, SH-60 Airborne Low Frequency Sonar (ALFS), and P-3 Special Projects systems platforms using Common Operating Environment /Tactical Advanced Signal Processor (COE/TASP).</p> <p>(\$0.405) Supported Common COTS signal processing and other Navy applications using the Final Vector Signal Image Processing (VSIP) Library for COE/TASP. Continued to work with industry to develop and enhance capabilities/functions for VSIP Library. Initiated migration of Message Passing Interface/Real Time (MPI/RT) functionality into the Common Object Request Broker Agent (CORBA).</p>										

R-1 SHOPPING LIST - Item No. 118 - 1 of 118 - 8

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 8)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002																				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05	R-1 ITEM NOMENCLATURE ENHANCED MODULAR SIGNAL PROCESSOR(EMSP) / 0604507N																					
<p>2. (U) FY 2002 Plans:</p> <p>(\$0.804) Design, develop, and begin integration of a portable AN/UYS-X test set to support AN/UYS-1 and AN/UYS-2/2A platform system integration activities.</p> <p>(\$0.200) Develop a working group to include DoD, industry, and academia in order to conduct research and investigation into the development and productization of a Virtual Digital Signal Processing Operating System (VDOS). This follow-on activity will be modeled after the successful VSIP Library effort with the goal of providing a portable OS to support the development of re-usable signal processing application software.</p> <p>3. (U) FY 2003 Plans:</p> <p>(\$0.238) Integrate and test a portable AN/UYS-X test set to support AN/UYS-1 and AN/UYS-2/2A platform system integration activities.</p> <p>(\$0.200) Continue development of VDOS.</p> <p>(\$0.075) Investigate legacy AN/UYS-X host computer replacement for later migration of Software Engineering Facility (SEF) software.</p>																						
<p>B. Program Change Summary</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>FY 2002 President's Budget:</td> <td style="text-align: center;">0.867</td> <td style="text-align: center;">1.013</td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">0.875</td> <td style="text-align: center;">1.013</td> <td></td> </tr> <tr> <td>Adjustments to FY 2001/2002 Appropriated Value/ FY 2002 President's Budget:</td> <td style="text-align: center;">-0.042</td> <td style="text-align: center;">-0.009</td> <td></td> </tr> <tr> <td>FY 2003 Pres Budget Submit:</td> <td style="text-align: center;">0.833</td> <td style="text-align: center;">1.004</td> <td style="text-align: center;">0.513</td> </tr> </tbody> </table> <p>Funding: FY 2001 changes include decreases for Small Business Innovative Research (SBIR) tax assessment (-0.015) and minor pricing adjustments (-0.027). FY 2002 decrease for Management Reform Initiatives (-0.009).</p>				FY 2001	FY 2002	FY 2003	FY 2002 President's Budget:	0.867	1.013		Appropriated Value:	0.875	1.013		Adjustments to FY 2001/2002 Appropriated Value/ FY 2002 President's Budget:	-0.042	-0.009		FY 2003 Pres Budget Submit:	0.833	1.004	0.513
	FY 2001	FY 2002	FY 2003																			
FY 2002 President's Budget:	0.867	1.013																				
Appropriated Value:	0.875	1.013																				
Adjustments to FY 2001/2002 Appropriated Value/ FY 2002 President's Budget:	-0.042	-0.009																				
FY 2003 Pres Budget Submit:	0.833	1.004	0.513																			

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05

R-1 ITEM NOMENCLATURE

ENHANCED MODULAR SIGNAL PROCESSOR(EMSP)/ 0604507N

C. Other Program Funding Summary

	FY 2000	FY 2001	FY2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Complete	Cost
OPN P-1 Line Item 95 (B.L. 298000/72DC)	0.9	1.5	1.3	0.0	0.3	0.4	0.6	0.7	CONT.	CONT.

D. Acquisition Strategy: Development work in this project is performed primarily by:

- Naval Air Warfare Center - Aircraft Division, Patuxent River (NAWC-AD): NSP Computer Program Support Activity (CPSA), Technical Design Agent (TDA)
- Naval Surface Warfare Center, Crane (NSWC): NSP Software Engineering

Future Plan:

Design, develop, integrate and test a AN/UYS-X portable test set in FY 2002 and FY 2003;
 Develop Virtual Digital Signal Processing Operating System (VDOS) and tools in FY2002 through 2004.
 Investigate legacy AN/UYS-X host computer replacement for later migration of Software Engineering Facility (SEF) software in FY 2003 through FY 2005.

R-1 SHOPPING LIST - Item No. 118 - 3 of 118 - 8

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 8)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

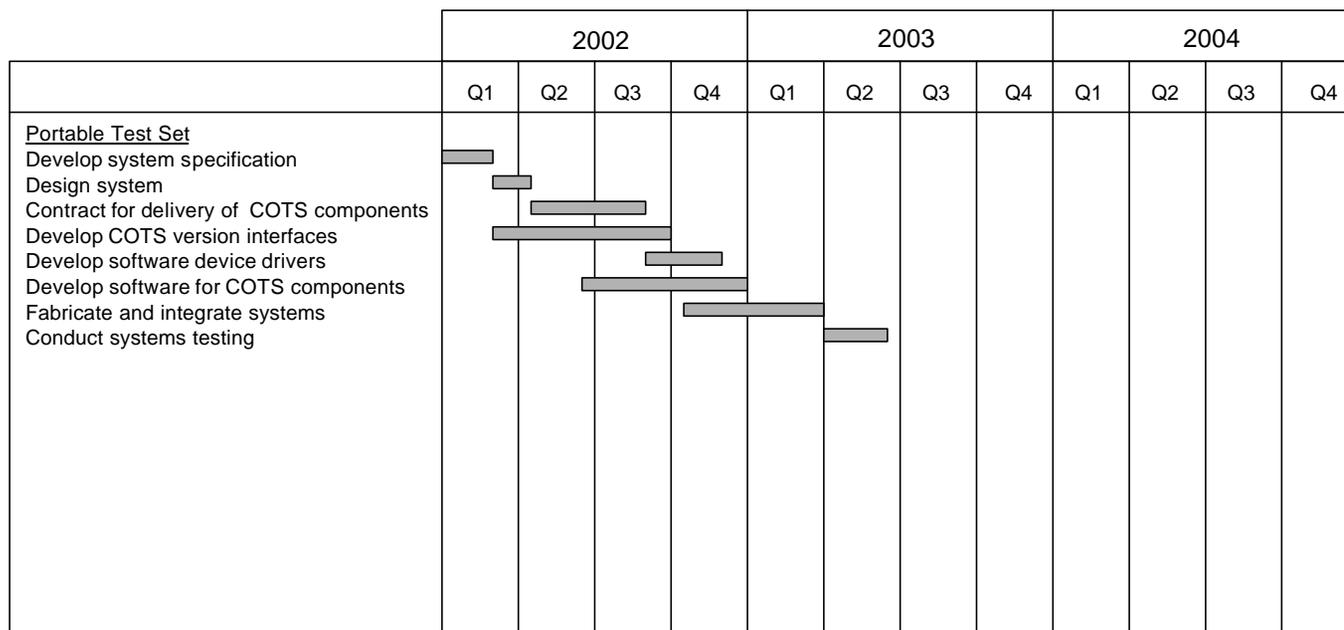
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05

R-1 ITEM NOMENCLATURE

ENHANCED MODULAR SIGNAL PROCESSOR(EMSP)/ 0604507N

E. Schedule Profile

Portable Test Set



R-1 SHOPPING LIST - Item No. 118 - 4 of 118 - 8

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 8)

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

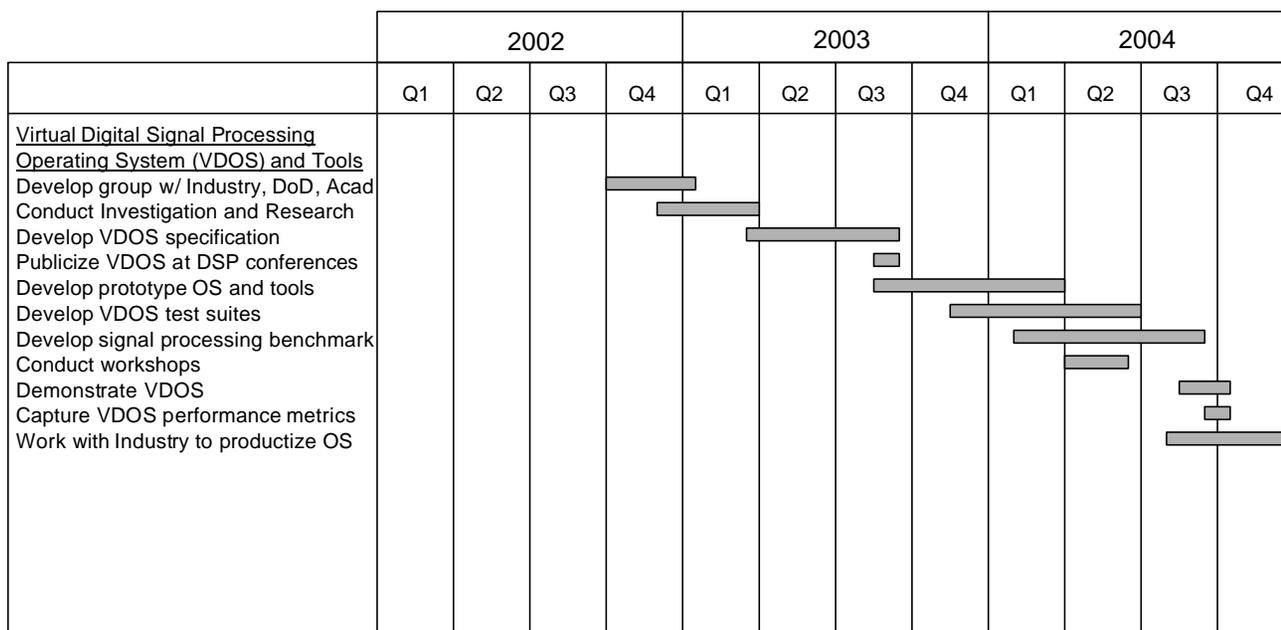
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05

R-1 ITEM NOMENCLATURE

ENHANCED MODULAR SIGNAL PROCESSOR(EMSP)/ 0604507N

E. Schedule Profile

Virtual Digital Signal Processing Operating System (VDOS) and Tools



R-1 SHOPPING LIST - Item No. 118 - 5 of 118 - 8

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 5 of 8)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

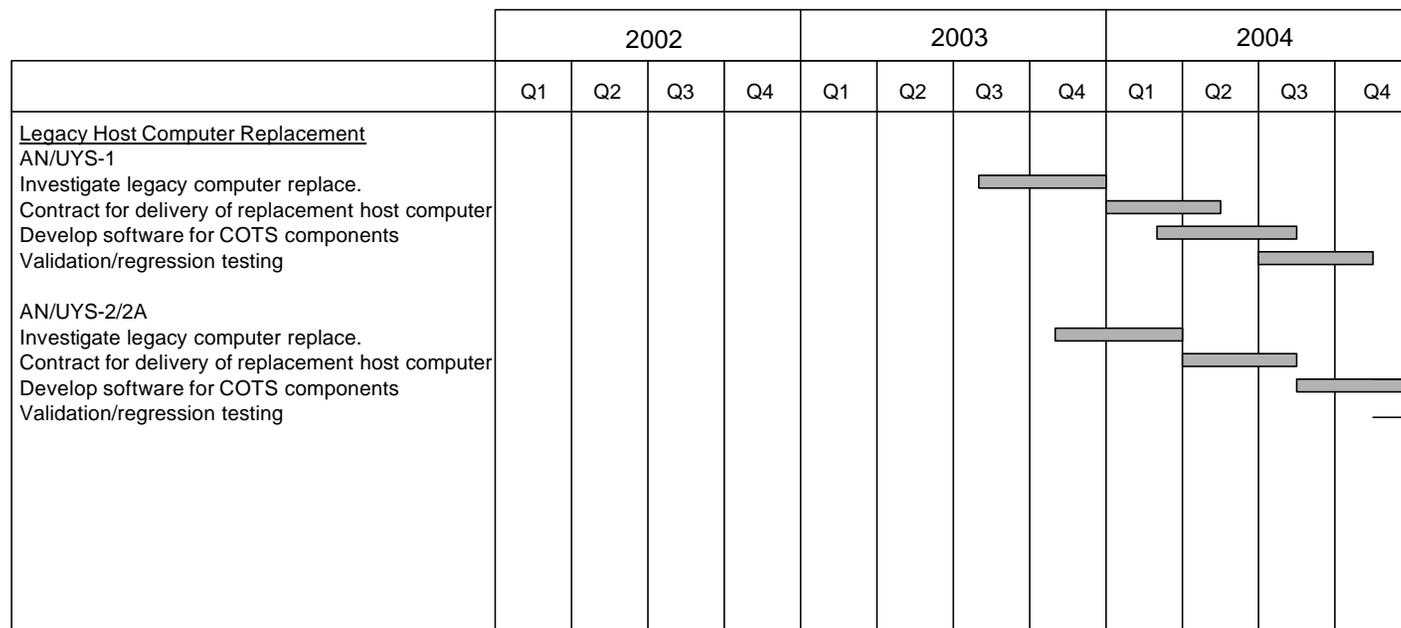
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05

R-1 ITEM NOMENCLATURE

ENHANCED MODULAR SIGNAL PROCESSOR(EMSP)/ 0604507N

E. Schedule Profile

Legacy Host Computer Replacement



R-1 SHOPPING LIST - Item No. 118 - 6 of 118 - 8

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 6 of 8)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E,N/ BA-05			0604507N			EMSP V1440/Q1440						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Signal Processor COTS Technology	WR/MP	SPAWAR/GTRI/MSU	2.718	0.405	12/00	0.090	01/02			0.000	3.213	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			2.718	0.405		0.090		0.000		0.000	CONT.	
Remarks:												
Development Support Equipment												
Software Engineering Support	WR	NAWC/AD	3.105	0.070	11/00	0.566	11/01	0.302	11/02	CONT.	CONT.	
Software Engineering Support	WR	NSWC/Crane				0.302	11/01	0.116	11/02	CONT.	CONT.	
Common Processing	Var.	Misc.		0.050	11/00					CONT.	CONT.	
Common Processing	MP	ARI		0.225	11/00					CONT.	CONT.	
Miscellaneous	Var.	Misc.				0.006	Var.	0.063	Var.	CONT.	CONT.	
Subtotal Development Support			3.105	0.345		0.874		0.481		0.000	CONT.	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 8)

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CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E,N/BA-05			0604507N			EMSP V1440/Q1440						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Contractor Engineering Support											0.000	
											0.000	
Program Management Support	CPFF	TWD	0.205	0.083	02/01	0.040	02/02	0.032	02/03	CONT.	CONT.	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.205	0.083		0.040		0.032		0.000	CONT.	
Remarks:												
Total Cost			6.028	0.833		1.004		0.513		0.000	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 118 - 8 of 118 - 8

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 8)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems					
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			10.544	17.965	24.619	18.953	18.719	19.023	19.345	Continuing	Continuing
W2232 CV Launch & Recovery Systems			10.544	16.230	24.619	18.953	18.719	19.023	19.345	Continuing	Continuing
W9071 Shipboard Aviation Information Technology				1.735							1.735
Quantity of RDT&E Articles					3						3
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering and manufacturing development of new end-items prior to production approval decision. This program includes the concept exploration and the development phase of the following systems under Projects W2232, and Project W9071 including the funding of PRMs:</p> <ul style="list-style-type: none"> - (U) Advanced Launch and Recovery Control System (ALRCS), provides a common control, monitoring and maintenance hardware system platform for current steam catapults and future arresting gear. - (U) Virtual Imaging System for Approach and Landing (VISUAL), replaces the LSO HUD and base console. VISUAL provides the LSO and ship's force with real time high-resolution composite video (IR/TVC) imagery of tracked aircraft. -(U) Moriah Wind System (MWS): Integrated digital wind measurement sytem replaces the Type F wind system on CV/CVN and LHA/LHD air capable ships. - (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear engine, which has reached the limits of its operating capability. - (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) Aircraft Carrier Arresting Gear Hydraulic Fluid: This program seeks to replace the unique hydraulic fluid , ethylene glycol , used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component protection and will reduce the life cycle cost of the system. -(U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner. <p>(U) A. JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT and DEMONSTRATION because it encompasses engineering and manufacturing of new end items prior to production approval decision.</p>											

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 15)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems				PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems					
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		10.544	16.230	24.619	18.953	18.719	19.023	19.345	Continuing	Continuing	
RDT&E Articles Qty				3						3	

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering development and demonstration of new end-items prior to production approval decision. This program includes the system development phase of the following systems under Project W2232, including the funding of production representative models (PRM): This program includes concept exploration and system development and demonstration of shipboard aviation data management systems required to automate manual processes during aviation operations on board aircraft carriers under Project W9071:

- (U) Advanced Launch and Recovery Control System (ALRCS): ALRCS introduces modern, modularized computer control systems to the catapults and arresting gear on aircraft carriers, which will support Condition Based Maintenance (CBM), enhance performance, and reduce life cycle costs.
- (U) Moriah Wind System (MWS): Moriah Wind System replaces current analog wind system with an integrated digital wind measurement system which will be an affordable, LAN compatible, wind suite for all classes of air capable Navy ships.
- (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force and Landing Signal Officer (LSO) with enhanced images of the aircraft during recovery operations in low visibility, day and night conditions.
- (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability.
- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) (Aircraft Carrier Arresting Gear Hydraulic Fluid): This program seeks to replace the unique hydraulic fluid, ethylene glycol, used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component projection, and will reduce the life cycle cost of the systems.
- (U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$7.880) VISUAL - Conducted VISUAL Critical Design Review (CDR) and initiated fabrication of two (2) CV/CVN PRM units. Provided engineering and management support to the program. - (U) (\$1.400) MWS - Finalized technical specifications and released RFP to industry. Initiated source selection activities. Provided engineering and management support to the program. - (U) (\$1.264) ALRCS - Continued development of ALRCS system architecture and performance specification. Developed Recovery Control System Interface Control Document and specifications to support AAG development program. Established ALRCS development lab operations and initiated sensor/software studies to determine workload and manning reduction impacts for candidate automation initiatives. Provided engineering and management support to the program. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$6.172) VISUAL - Complete Fabrication of two (2) CV/CVN PRM units and conduct integration/test efforts. Provide engineering and management support to the program. - (U) (\$1.751) MWS - Receive MS B approval and award SDD contract. Complete PDR and CDR. Provide engineering and management support to the program. - (U) (\$1.374) ALRCS - Solicit industry for technology , system solutions and prepare technical specification requirements. Merge/combine efforts into Avanced Arresting Gear program. Provide engineering and management support to the program. - (U) (\$6.367) AAG- Finalize and release RFP to industry. Prepare for and recieve Milestone B approval and award SDD contract. Complete System Requirements Review. Initiate system design efforts for AGG including preliminary design. Evaluate critical technologies through modeling and simulation, subscale component, subsystem and system testing. Provide engineering and management support to the program. - (U) (\$0.075) CREI - Conduct PDR for Commercial Arresting Gear hydraulic fluid in support of Cost Reduction & Effectiveness Improvement Initiative (CREI). - (U) (\$0.491) - Portion of extramural program reserved for Small Business Innovation Research assessment. 		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	February 2002
PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems		
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: continued</p> <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (\$7.769) VISUAL - Deliver two (2) CV/CVN PRM units. Complete environmental/EMI/R&M lab and conduct landbased/shipboard developmental testing. Provide engineering and management support to the program. Award LH development contract option.- (U) (\$2.311) MWS - Deliver Moriah PRM. Initiate and complete developmental testing. Provide engineering management support for the program.- (U) (\$14.355) AAG - Continue preliminary design and initiate test site planning. Continue to evaluate critical technologies through subscale component and subsystem testing. Complete PDR and provide engineering and management support to the program.- (U) (\$0.184) CREI - Conduct dead-load testing on selected alternative hydraulic fluids. Initiate development testing of commercial Arresting Gear hydraulic fluid recycle.		

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			February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 - CV Launch & Recovery Systems	
(U) B. PROGRAM CHANGE SUMMARY:			
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:	9.627	16.375	
(U) Adjustments from the President's Budget:	0.917	-0.145	
(U) FY 2003 President's Budget Submit:	10.544	16.230	24.619
CHANGE SUMMARY EXPLANATION:			
(U) Funding:			
-The FY 2001 net increase of \$0.917 reflects a \$1.431 million increase to fund the VISUAL program offset by a \$0.290 million reduction for a Small Business Innovation Research assessment and a			
\$0.224 million decrease for reprioritization of requirements within the Navy.			
-The FY 2002 decrease of \$.145 million is for an undistributed congressional reduction.			

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W2232 - CV Launch & Recovery Systems																					
<p>(U) Schedule: Moriah program slipped due to delays in receiving program documentation and directed changes to the acquisition strategy. Moriah finalized program specifications and engaged industry for presolicitation comments. These changes have caused the following modifications to the Moriah Wind System effort. Moriah PRM award scheduled for 3Q/01 has slipped to 2Q/02 and the Moriah RFP has slipped from 1Q/01 to 1Q/02. Moriah PDR scheduled for 4Q/01 has been moved to 3Q/02. Moriah CDR scheduled for 1Q/02 has moved to 4Q/02. Moriah MS B has moved from 3Q/01 to 2Q/02 and MS C has moved from 4Q/02 to 2Q/04. Moriah developmental testing has moved from 1Q-3Q/02 to 4Q/03 and operational testing has moved from 3Q/02 to 1Q/04. VISUAL effort has slipped one year to the right due to unscheduled delays and program cost growth. VISUAL DT/OT and MS C delays reflect new SDD contractor's planned schedule. VISUAL developmental tests scheduled for 3Q-4Q/02 have slipped to 1Q-4Q/03. Additionally, the two L-class EDM units scheduled for delivery in FY02 have been cancelled. Common components of CV EDM units will be modified for LH testing. VISUAL(CV) milestone C has moved from 3Q/03 to 3Q/04. VISUAL (LH) OT slipped from 1Q/04 to 1Q/05 and VISUAL (CV) OT has moved from 1Q/03 to 1Q/04. VISUAL (LH) DT has been rescheduled from 3-4Q/03 to 3-4Q/04. All ALRCS milestones have been incorporated into the AAG program. CREI PDR has slipped from 2Q/02 to 4Q/02;</p> <p>(U) Technical: ALRCS implementation and funding transferred to AAG beginning in FY03. ALRCS provides the enhanced control system embedded training, condition-based maintenance, etc. portion of AAG. Merging the two programs will reduce technical risk.</p> <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 25%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> </tr> </thead> <tbody> <tr> <td>OPN (Aircraft Launch & Recovery Equipment, 43SJ)</td> <td style="text-align: center;">36.092</td> <td style="text-align: center;">27.115</td> <td style="text-align: center;">19.355</td> <td style="text-align: center;">20.871</td> <td style="text-align: center;">22.420</td> <td style="text-align: center;">32.837</td> <td style="text-align: center;">34.079</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Related RDT&E P.E. 0603512N (Carrier Systems Development)</p>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	OPN (Aircraft Launch & Recovery Equipment, 43SJ)	36.092	27.115	19.355	20.871	22.420	32.837	34.079	Continuing
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>																		
OPN (Aircraft Launch & Recovery Equipment, 43SJ)	36.092	27.115	19.355	20.871	22.420	32.837	34.079	Continuing																		

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	February 2002
<p>(U) D. ACQUISITION STRATEGY:</p> <p>MWS: Moriah Wind System. The Navy has prepared a performance specification and will competitively award an IDIQ contract to cover SDD (CPIF) and production requirements (FFP).</p> <p>VISUAL: Virtual Imaging System for Approach and Landing. The Navy prepared a performance specification and competitively awarded a cost plus incentive fee contract to develop/deliver PRMs, with fixed-price successive target production options. LH system development is a contractual option</p> <p>ALRCS: Advanced Launch and Recovery Control System will become part of Advanced Arresting Gear program. Advanced Launch control System deferred pending redefinition of launch process under Electromagnetic Aircraft Launcher Systems program.</p> <p>AAG: Advanced Arresting Gear. The Navy will competitively award a cost incentive System Development and Demonstration contract to develop the AAG for evaluation at the NAWCADLKE Runway Arrested Landing Site followed by a fixed price contract award for production.</p> <p>CREI: Cost Reduction and Effectiveness Improvement. The Navy will competitively award a prototype contract of a commercial fluid. The Navy will laboratory test commercial samples and then award and test one engines worth of fluid.</p>		

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 7 of 15)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems																											
<p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%; text-align: center;"><u>FY 2001</u></th> <th style="width: 20%; text-align: center;"><u>FY 2002</u></th> <th style="width: 20%; text-align: center;"><u>FY 2003</u></th> <th style="width: 20%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>Moriah: 2Q/02 MS B AAG: 2Q/02 MS B</td> <td></td> <td>VISUAL(CV): 3Q/04MS C VISUAL (LH) 3Q/05 MS C Moriah: 2Q/04 MS C AAG: 2Q/08 MS C</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>VISUAL (CV): 1Q/01 CDR</td> <td>AAG: 2Q/02 SRR Moriah: 3Q/02 PDR Moriah: 4Q/02 CDR CREI: 4Q/02 PDR</td> <td>AAG: 4Q/03 PDR</td> <td>AAG: 4Q/04 CDR</td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>CREI: 2Q/02 CDR</td> <td>Moriah: 4Q/03 DT VISUAL(CV): 1Q-4Q/03 DT CREI: 2Q/03 DT</td> <td>VISUAL(LH): 1Q/05 OT VISUAL(CV):1Q/04 OT VISUAL(LH): 3Q-4Q/04 DT Moriah: 1Q/04 OT</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>AAG: 2Q/02 SSD AWARD Moriah: 2Q/02 SSD AWARD Moriah: 1Q/02 RFP</td> <td></td> <td>AAG: 2Q/06 - 2Q/07 - DT AAG: 3Q/07-4Q/07 - OT</td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones		Moriah: 2Q/02 MS B AAG: 2Q/02 MS B		VISUAL(CV): 3Q/04MS C VISUAL (LH) 3Q/05 MS C Moriah: 2Q/04 MS C AAG: 2Q/08 MS C	(U) Engineering Milestones	VISUAL (CV): 1Q/01 CDR	AAG: 2Q/02 SRR Moriah: 3Q/02 PDR Moriah: 4Q/02 CDR CREI: 4Q/02 PDR	AAG: 4Q/03 PDR	AAG: 4Q/04 CDR	(U) T&E Milestones		CREI: 2Q/02 CDR	Moriah: 4Q/03 DT VISUAL(CV): 1Q-4Q/03 DT CREI: 2Q/03 DT	VISUAL(LH): 1Q/05 OT VISUAL(CV):1Q/04 OT VISUAL(LH): 3Q-4Q/04 DT Moriah: 1Q/04 OT	(U) Contract Milestones		AAG: 2Q/02 SSD AWARD Moriah: 2Q/02 SSD AWARD Moriah: 1Q/02 RFP		AAG: 2Q/06 - 2Q/07 - DT AAG: 3Q/07-4Q/07 - OT
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																									
(U) Program Milestones		Moriah: 2Q/02 MS B AAG: 2Q/02 MS B		VISUAL(CV): 3Q/04MS C VISUAL (LH) 3Q/05 MS C Moriah: 2Q/04 MS C AAG: 2Q/08 MS C																									
(U) Engineering Milestones	VISUAL (CV): 1Q/01 CDR	AAG: 2Q/02 SRR Moriah: 3Q/02 PDR Moriah: 4Q/02 CDR CREI: 4Q/02 PDR	AAG: 4Q/03 PDR	AAG: 4Q/04 CDR																									
(U) T&E Milestones		CREI: 2Q/02 CDR	Moriah: 4Q/03 DT VISUAL(CV): 1Q-4Q/03 DT CREI: 2Q/03 DT	VISUAL(LH): 1Q/05 OT VISUAL(CV):1Q/04 OT VISUAL(LH): 3Q-4Q/04 DT Moriah: 1Q/04 OT																									
(U) Contract Milestones		AAG: 2Q/02 SSD AWARD Moriah: 2Q/02 SSD AWARD Moriah: 1Q/02 RFP		AAG: 2Q/06 - 2Q/07 - DT AAG: 3Q/07-4Q/07 - OT																									

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Exhibit R-3 Cost Analysis (page 2)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems						
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
DT - (VISUAL/Moriah/CREI)	WX	NAWCAD,Lakehurst						2.150	11/02		2.150	
Operational testing(VISUAL/Moriah)	WX	NAWCAD,Lakehurst								0.250	0.250	
Subtotal T&E								2.150		0.250	2.400	
Remarks:												
Program Management Support	RX	NAWCAD Patuxent River		0.207	03/01	0.210	05/02	0.214	05/03	Continuing	Continuing	
Travel	WX	NAWCAD Patuxent River		0.035	11/00	0.035	10/01	0.035	10/02	Continuing	Continuing	
SBIR Assessment						0.491					0.491	
Subtotal Management				0.242		0.736		0.249		Continuing	Continuing	
Remarks:												
Total Cost			36.411	10.544		16.230		24.619		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems					W9071 Aviation-Shipboard Information Technology					
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				1.735							1.735
RDT&E Articles Qty	Not Applicable										
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. FY 2001 ACCOMPLISHMENTS: Not Applicable. 2. FY 2002 PLANS: -(U) (\$1.735) Define and document overall system requirements and system architecture for future development, test and production and shipboard installation. 3. FY 2003 PLANS: Not applicable. 											

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W9071 Aviation-Shipboard Information Technology	
(U) B. PROGRAM CHANGE SUMMARY:			
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget:		0.000	
(U) Adjustments from the President's Budget:		1.735	
(U) FY 2003 Presidents's Budget:		1.735	
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2002 net increase of \$1.735 million consists of a Congressional increase of \$1.750 million offset by a decrease of \$0.015 million for an undistributed Congressional reduction.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9071 Aviation-Shipboard Information Technology				
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
Not Applicable	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>
Related RDT&E: Not Applicable								
(U) D. ACQUISITION STRATEGY:								
Fiscal year 2002 NAWCAD Lakehurst activity to define requirements and system architecture with engineering support from industry as required. Follow on strategy to develop, test, and produce system will be determined upon identification of follow on funding.								
(U) E. SCHEDULE PROFILE:								
(U) Program Milestones	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>				
(U) Engineering Milestones				Define System Reqmts-3Q/02 Define System Architecture-4Q/02				
(U) T&E Milestones								
(U) Contract Milestones								

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9071 Aviation-Shipboard Information Technology						
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
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	WX	Lakehurst				1.735					1.735	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						1.735					1.735	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604512N - Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9071 Aviation-Shipboard Information Technology						
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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management												
Remarks:												
Total Cost								1.735			1.735	
Remarks:												

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 15 of 15)

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5				NTDS Improv./ Common C&D / 0604518N Project K1604					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	*7.524	5.344	**0.000	0.000	0.000	0.000	0.000	CONT	CONT
NTDS Software Improvement/Common C&D/K1604	7.524	5.344	0.000	0.000	0.000	0.000	0.000	CONT	CONT
Quantity of RDT&E Articles									
<p>* CC&D program was funded in FY00/01 under the PE: 0603582N, Combat Systems Integration (CSI), Project Unit: S0164 **CC&D program FY03-07 transferred under PE: 0604307, AEGIS Combat System Engineering, Project Unit: K1447 A. Mission Description and Budget Item Justification</p> <p>FY00-FY01 The ACDS Block 1 program replaces the vintage Naval Tactical Data System (NTDS) operating systems and applications algorithms and implements advanced concepts for Tactical Data Systems upgrades for surface combatants in response to future threats, operational deficiencies and new and existing operational requirements. The increased emphasis on joint operations and littoral warfare has improved the importance of ACDS Block 1's joint operability and improved littoral warfare capabilities. The program's objective is to develop integrated real time command and control systems that will increase ship's operational capabilities; promote standardization and introduce new shipboard tactical displays and support equipment; and provide integration between sensor/weapons system which are organic to and outside the battle force. This program provides for significant Combat Direction System (CDS) improvements including implementation of the Joint Tactical Information Data System (JTIDS/Tactical Data Information Link Joint (TADILJ) (LINK 16) message standard to support interoperability/joint operations with U.S. Navy/Army/Air Force/Marine and NATO forces; implementation of the Aegis Tactical Executive System (ATES); and integration and interface with the Command and Control Processor (C2P), the Cooperative Engagement Capability (CEC), and Ship's Self Defense System (SSDS).</p> <p>FY02 Common Command and Decision (CC&D) capability is a pre-planned product improvement (P3-I) to the Aegis Weapon System and the Ship Self-Defense System (SSDS) MK 2 that replaces the command and decision capability presently in these systems with a common computer program. This effort will avoid future life-cycle costs by reducing the number of computer programs that must be maintained, enable the navy to field new or modified warfighting capability by eliminating the redundant, conflicting processing present in existing systems. CC&D is a critical step toward developing systems that will resolve long-term interoperability problems and achieve improvements in the air picture.</p>									

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/ BA 5	PROGRAM ELEMENT NAME AND NUMBER CIC Conversion/ 0604518N	PROJECT NAME AND NUMBER: NTDS Improv./ Common C&D / 0604518N Project K1604																								
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 Accomplishments: - (U) (\$7.524) Supported TECHEVAL and OPEVAL with CEC and corrected deficiencies.</p> <p>2. (U) FY 2002 Plan: - (U) (\$3.450) Continue Design Engineering. - (U) (\$0.650) Continue Acquisition Management Support. - (U) (\$1.244) Continue Technical Management Support. FY02 Congressional Plus-up for \$17M was incorrectly placed in PE 0603582N.</p> <p>3. (U) FY 2003 Plan: N/A</p>																										
<p>B. Program Change Summary:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="width:15%; text-align: center;">FY 2001</th> <th style="width:15%; text-align: center;">FY 2002</th> <th style="width:20%; text-align: center;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>FY 2002 President's Budget:</td> <td style="text-align: center;">3.686</td> <td style="text-align: center;">5.392</td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">3.720</td> <td style="text-align: center;">5.392</td> <td></td> </tr> <tr> <td>Adjustments to FY2001/2002</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Appropriated Value/FY2002 President's Budget</td> <td style="text-align: center;">3.804</td> <td style="text-align: center;">-0.048</td> <td></td> </tr> <tr> <td>FY 2003 Pres Budget Submit:</td> <td style="text-align: center;">7.524</td> <td style="text-align: center;">5.344</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> <p>Funding: FY2001: (+3.927) reprogramming,(-.080) for SBIR, (-.043) for minor pricing adjustments. FY2002: (-0.048) minor pricing adjustments FY2003: Integration of AEGIS O/A and CC&D.</p> <p>Schedule: N/A</p> <p>Technical: N/A</p>				FY 2001	FY 2002	FY 2003	FY 2002 President's Budget:	3.686	5.392		Appropriated Value:	3.720	5.392		Adjustments to FY2001/2002				Appropriated Value/FY2002 President's Budget	3.804	-0.048		FY 2003 Pres Budget Submit:	7.524	5.344	0.000
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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002																						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/ BA 5		PROGRAM ELEMENT NAME AND NUMBER CIC Conversion/ 0604518N			PROJECT NAME AND NUMBER: NTDS Improv./ Common C&D / 0604518N Project K1604																								
<p>C. Other Program Funding Summary O&M,N 0708017N/46N80 Ship System Tactical</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Complete</u></th> <th style="text-align: center;"><u>To Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>NTDS</td> <td style="text-align: right;">12.435</td> <td style="text-align: right;">14.394</td> <td style="text-align: right;">22.958</td> <td style="text-align: right;">19.700</td> <td style="text-align: right;">18.858</td> <td style="text-align: right;">20.662</td> <td style="text-align: right;">21.383</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>D. Acquisition Strategy: NTDS: ACDS Block 1 program has been completed in FY 2001 upon the completion of CEC Baseline 2 TECHEVAL and OPEVALs. Until then the hardware and software corrections will be made by Raytheon Systems Company via a sole source contract, N00024-97-C-5466. The life cycle maintenance and software support agent for ACDS Block 1 is NAVSEA Damneck.</p> <p>Common C&D: Three Technical Instructions were awarded to Lockheed Martin Government Electronic Systems (Moorestown,NJ), Raytheon Naval and Maritime Systems (San Diego, CA), and Digital Systems Resource (Fairfax, VA) to conduct Design Engineering.</p>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Complete</u>	<u>To Total Cost</u>	NTDS	12.435	14.394	22.958	19.700	18.858	20.662	21.383	CONT.	CONT.
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Complete</u>	<u>To Total Cost</u>																				
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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

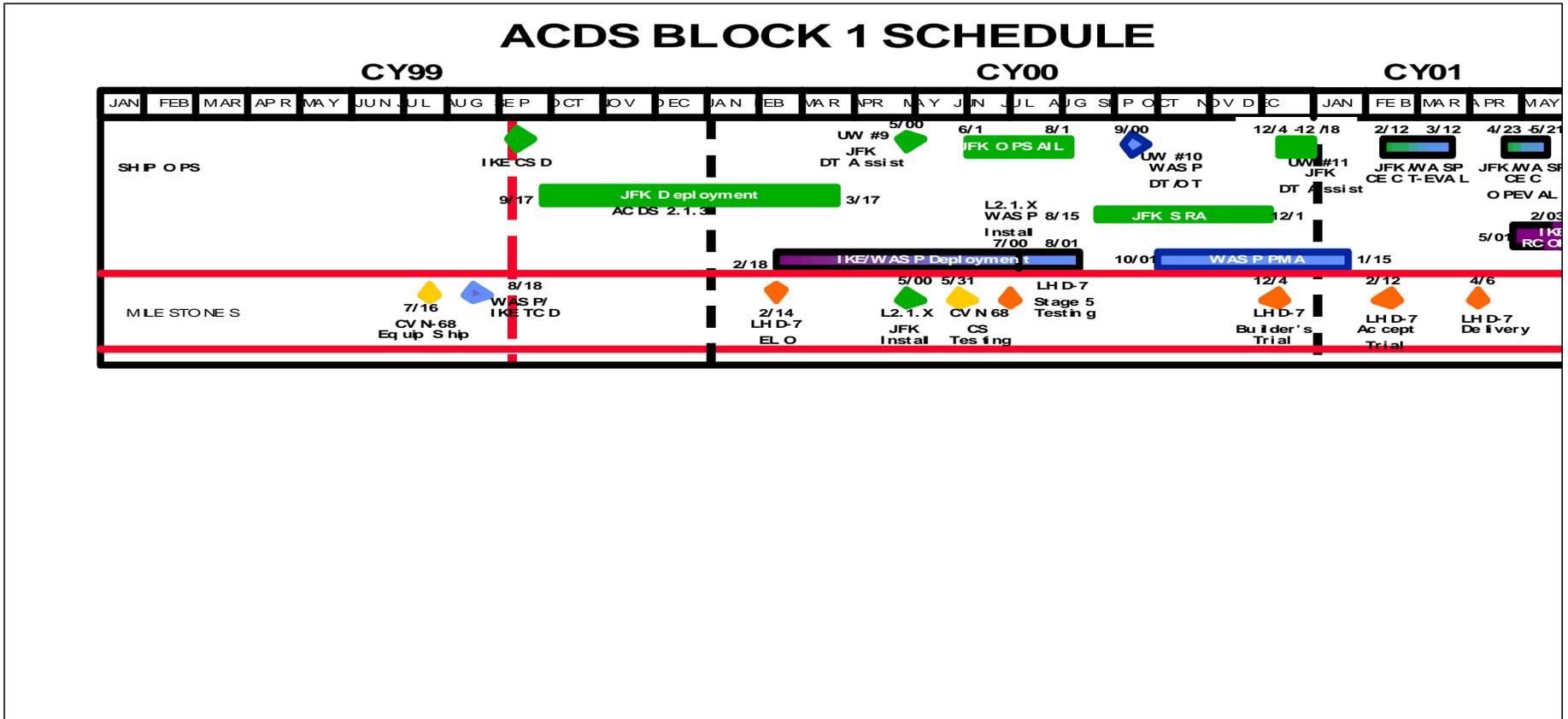
PROJECT NAME AND NUMBER:

RDT&E, N/ BA 5

CIC Conversion/ 0604518N

NTDS Improv./ Common C&D / 0604518N Project K1604

E. Schedule Profile: The LHD 7 M/S dates moved to the right when the fuel oil compensating SHIPALT was made part of the SCN construction.



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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY

RDT&E, N/ BA 5

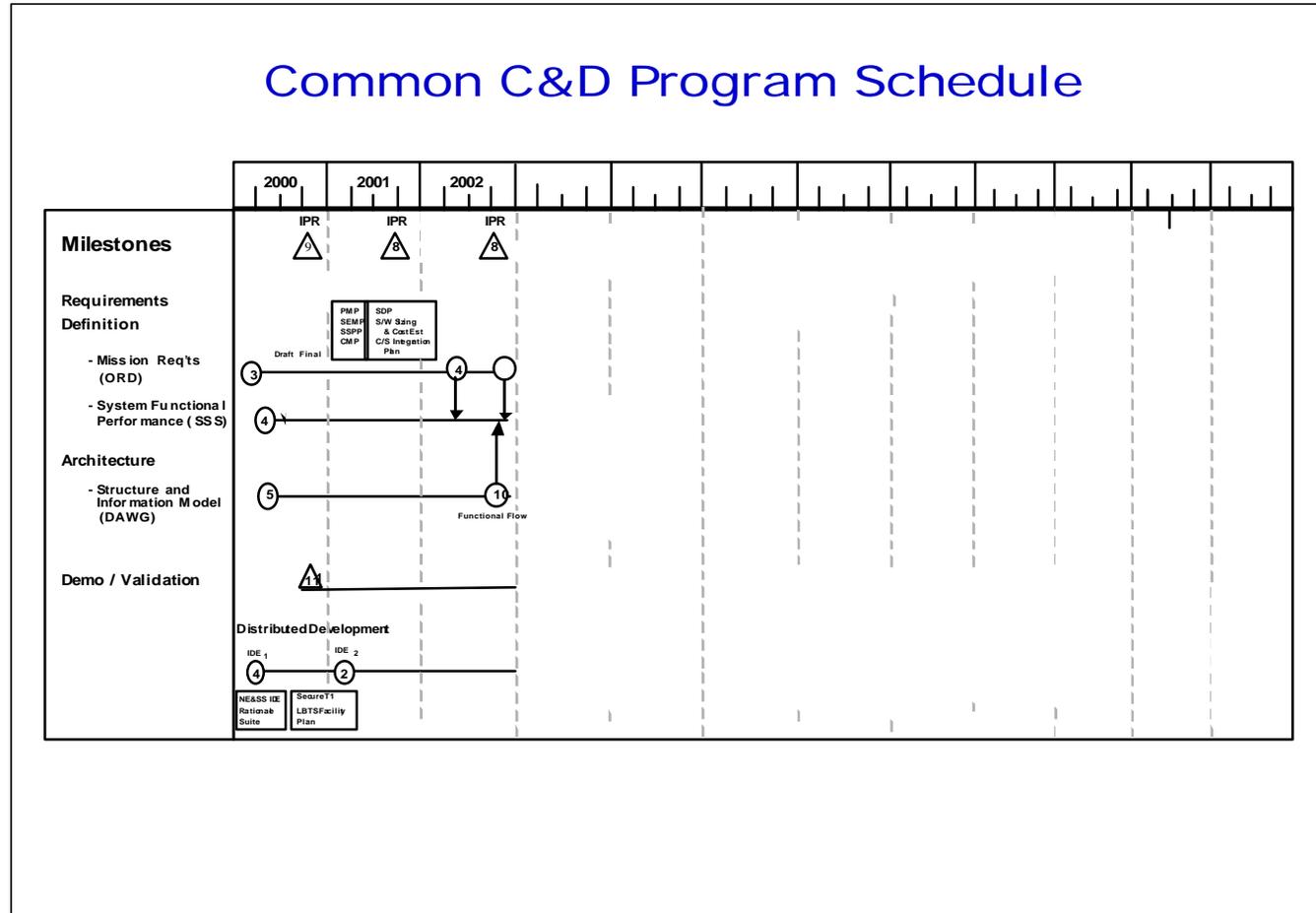
PROGRAM ELEMENT NAME AND NUMBER

CIC Conversion/ 0604518N

PROJECT NAME AND NUMBER:

NTDS Improv./ Common C&D / 0604518N Project K1604

E. Schedule Profile:



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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E,N/BA 5			CIC Conversion/0604518N			NTDS Improv./ Common C&D / 0604518N Project K1604						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY01 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
Primary Product Development	C/CPAF	Hughes Aircraft Co.	106.521	0.000	N/A	0.000	N/A	0.000	N/A	0.000	106.521	106.521
Primary Product Development	SS/CPFF	Hughes Aircraft Co.	17.806	0.000	N/A	0.000	N/A	0.000	N/A	0.000	17.806	48.418
Primary Product Development	SS/CPFF	Raytheon Systems Co.	11.171	3.392	10/00	0.000	N/A	0.000	N/A	0.000	14.563	25.945
Govt. Engineering & Formal Test	WR	SSC-SD	43.326	0.000	N/A	0.000	N/A	0.000	N/A	0.000	43.326	N/A
Govt. System Eng./ILS/Training/Test	WR	NSWC/PHD	2.424	0.461	10/00	0.000	N/A	0.000	N/A	0.000	2.885	N/A
Miscellaneous/Government	VAR	Various	0.974	1.127	10/00	0.000	N/A	0.000	N/A	0.000	2.101	N/A
Miscellaneous/Contractors	VAR	Various	10.645	0.000	10/00	0.000	N/A	0.000	N/A	0.000	10.645	N/A
System Engineering	PD	APL, Largo, MD	0.000	1.369	10/00	0.000	N/A	0.000	N/A	0.000	1.369	N/A
Common C&D Contract Supt	C/CPFF	Various	0.000	0.000	N/A	3.351	10/01	0.000	10/02	CONT.	CONT.	
System Engineering	WR/RC	NSWC, DD	0.000	0.000	N/A	0.906	10/01	0.000	10/02	CONT.	CONT.	
Subtotal Product Development			192.867	6.349		4.257		0.000		CONT.	CONT.	
Remarks: N00024-97-C-5466 was awarded as a CPAF/CPFF contract, with CLIN 0007 for ACDS Block 1 program specific efforts was a CPFF/LOE CLIN.												
Test Facility/Simulation Upgrd./Lic	VAR	Various	14.040	0.456	10/00	0.000	N/A	0.000	N/A	0.000	14.496	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			14.040	0.456		0.000		0.000		0.000	14.496	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			CIC Conversion/ 0604518N			NTDS Improv./ Common C&D / 0604518N Project K1604						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
DT/OT Test, Test Spt., IV&V Efforts	VAR	Various	21.576	0.210	10/00	0.000	N/A	0.000	N/A	0.000	21.786	N/A
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			21.576	0.210		0.000		0.000		0.000	21.786	
Remarks:												
Resource Management Support	VAR	Various	0.818	0.207	10/00	0.000	N/A	0.000	N/A	0.000	1.025	1.025
Government Engineering Support	VAR	Various	0.000	0.000	10/00	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Contractor Engineering Support	VAR	Various	0.000	0.250	N/A	0.000	N/A	0.000	N/A	0.000	0.250	N/A
Program Management Support	VAR	Various	0.000	0.000	N/A	0.985	10/01	0.000	10/02	CONT.	CONT.	N/A
Travel	PD	NAVSEA	0.000	0.000	N/A	0.102	10/01	0.000	10/02	CONT.	CONT.	N/A
Travel	VAR	Various	0.127	0.052	10/00	0.000	N/A	0.000	N/A	0.000	0.179	N/A
Subtotal Management			0.945	0.509		1.087		0.000		CONT.	CONT.	N/A
Remarks: N00024-95-C-5433 was not awarded specifically for ACDS Block 1, support also includes SSDS MK 1 support efforts.												
Total Cost			229.428	7.524		5.344		0.000		CONT.	CONT.	
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE							
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		VIRGINIA Class Design Development/0604558N							
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	Cost to Complete	Total Cost
Total PE Cost	207.395	204.667	238.253	194.578	188.805	183.705	182.626	79.335	3369.764
VIRGINIA Class HM&E Development/F1947	127.255	120.103	128.741	125.730	132.895	138.096	123.327	79.335	2229.509
VIRGINIA Class Combat Systems Dev/F1950	73.387	79.707	92.907	62.390	51.839	45.609	59.299	0.000	1065.996
Enhanced Sonar Dome Demo/Validation/F2429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.548
Adv Sub Tactical Electronic Sys/Int. Mast/F2430	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.545
VIRGINIA Class Advance Tech Insertion/F2644	4.823	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.662
NON-Propulsion Electronics System/F2645	1.930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.513
VIRGINIA Class SSN Combat Sys Tec Insert/Refresh/F2887	0.000	4.857	0.000	0.000	0.000	0.000	0.000	0.000	4.857
Submarine Multi Mission Team Trainer/F3062	0.000	0.000	16.605	6.458	4.071	0.000	0.000	0.000	27.134
Quantity of RDT&E Articles									
<p>A. (U) Mission Description and Budget Item Justification: The U.S. Navy must maintain a submarine fleet that is of sufficient capability and numbers to defend American interests. The VIRGINIA Class Submarine formerly the New Attack Submarine (New SSN) is being designed to fulfill this need. It will counter the potential threats of the next century in a multi-mission capable submarine that has the ability to provide covert, sustained combat presence in denied waters. The primary goal of the program is to develop an affordable yet capable submarine by evaluating a broad range of system and technology alternatives, and pursuing cost reduction, producibility improvement, and technical risk management. This Program Element (PE) provides the technology, prototype components, and systems engineering needed to design and construct the VIRGINIA Class Submarine and build and its Command, Control, Communications, and Intelligence (C3I) System. This PE directly supports the following VIRGINIA Class Submarine missions: (1) covert strike warfare; (2) anti-submarine warfare; (3) covert intelligence collection/surveillance, indication and warning, and electronic warfare; (4) anti-surface ship warfare; (5) special warfare; (6) mine warfare; and (7) battle group support.</p> <p>(U) Project F2429: Plus up continued a FY97 special Congressional interest item that includes B.F. Goodrich, Electric Boat and Naval Surface Weapons Center as participants. The line funded investigation into new manufacturing processes for a submarine bow SONAR dome.</p> <p>(U) Project F2430: The Congressional plus-up for Advance Submarine Tactical Electronic Combat System (ASTECS) and Integrated Electronic Support (ES) Measures Mast (IEM) restored several highly desirable elements of the ASTECS/IEM programs to improve platform performance. These items were eliminated due to fiscal constraints. Improvements included enhancements to ship's radar intercept, emitter identification, and signal intercept capabilities.</p>									

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: FEBRUARY 2002	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE VIRGINIA Class Design Development/0604558N	
<p>(U) Project F2644: The Congressional Plus-Up provided additional funding to insert new technologies on the VIRGINIA Class Submarine. With these funds, three technology insertions were initiated for VIRGINIA Class Submarine specific development: High Frequency Remote Ahead Profiling; Total Ship Monitoring System (TSMS) Improvements; and Advanced Sail. FY01 Submarine Congressional Plus-Up is for Multi Purpose Processor (MPP) SBIR follow-on for Technology Insertion and refresh for Virginia SSN Combat System.</p> <p>(U) Project F2645: The Congressional plus-up is for VIRGINIA Class Submarine Non-Propulsion Electronics System (NPES) inter-system engineering and integration efforts. FY01 Submarine Congressional Plus-Up is for Submarine Common Architecture.</p> <p>(U) Project F2887: The Congressional plus-up is for MPP SBIR follow-on for Technology Insertion and refresh for VIRGINIA SSN Combat System.</p> <p>(U) Project F3062: The SMMTT program replaces the proprietary mainframe computer system by re-hosting functions on industry standard Local Area Network (LAN) workstations. The mainframes can no longer be upgraded due to service life. The SMMTT modification applies to both the Combat Control System (CCS) trainers and the Acoustic trainers and will occur in three distinct phases. SMMTT Phase 1 and Phase 2 were funded in OPN BLI 5661 to complete the trainer-unique software offload and enables further enhancements. SMMTT Phase 3, funded in this RDT&E line will provide the architectural foundation to replace all MIL Standard hardware with commercial emulation hardware, and rehost existing proprietary based software (s/w) into COTS s/w systems, therefore enabling platform independence and wide area network capability. The use of open architecture trainer systems allows for the continuous growth of functional flexibility ultimately leading to employment training conducted for any submarine combat system.</p> <p>B. (U) Program Change Summary:</p>			
	FY 2001	FY 2002	FY 2003
(U) FY 2002 President's Budget:	212.127	201.596	
(U) Appropriated Value:	214.091	206.496	
(U) Adjustment to FY 2001/2002/Appropriated Value/FY 2002:			
President's Budget:	-6.696	-1.829	238.253
(U) FY2003 Pres Budget Submit:	207.395	204.667	238.253

R-1 SHOPPING LIST - Item No. 122

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 26)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE VIRGINIA Class Design Development/0604558N	
<p>(U) Change Summary Explanation:</p> <p>(U) F1947 Funding:</p> <p>FY2001 decrease of \$-6.602M is attributed to decreases of (\$-3.416M) for SBIR, (\$-0.024M) for Federal Technology & Insertion, (\$-0.335M) for Canceled Accounts, (\$-1.599M) for BTRS Adjustments, (\$-0.291M) for Government-Wide Rescission, (-\$0.937M) .07% Pro-Rata.</p> <p>FY2002 decrease of \$-1.075M is attributed to decreases of (\$-1.071M) for Section 8123: Management Reform Initiativesand (\$-0.004M) for PBD-630.The</p> <p>FY2003 increase of \$15.284M is attributed to increases of (\$20.500M) for PDM II, (\$0.220M) for NWCF Rate adjustments and (\$0.007M) for PBD-606, (\$0.189M) for BOS Incorporation of PBD's and decreases of (\$-0.345M) for BOS, realignment residual issue, (\$-0.002M) for reimbursable funding implication, (\$-1.520M) for SYSCOM contractor support, (\$-2.852M) for PBD-404, (\$-0.738M) for PBD-604, and (\$-0.175M) for PBD-P33.</p> <p>(U) F1950 Funding:</p> <p>FY2001 increase of \$0.153M is attributed to an increase of (\$2.523M) for BTR01-22 and decreases of (\$-1.515M) for SBIR and (\$-0.183M) for Canceled Accounts, (\$-0.159M) Government-Wide Rescission.</p> <p>FY2002 decrease of \$-711M is attributed to a decrease of (\$-0.711M) for Section 8123: Management Reform Initiatives.</p> <p>FY2003 increase of \$29.228M is attributed to an increase of (\$10.500M) for Tactical Controls Rapid COTS insertion (TD-RCI), (\$20.500M) for PDM-II and (\$0.152M) for NWCF Rate adjustments and decreases of (\$-0.193M) for BSO relainment residual issue, (\$-0.002M) for reimbursable funding implication, (\$-0.930M) for SYSCOM Contractor Support, (\$-0.267M) for PDB-404 and (\$-0.532M) for PBD-604.</p> <p>(U) F2644 Funding:</p> <p>FY2001 decrease of \$-0.177M is attributed to an assessment for SBIR, (-\$0.131M) Government-Wide Rescission, (\$-0.011M), .07% Pro-Rata, (-\$0.035) .</p> <p>(U) F2645 Funding:</p> <p>FY2001 decrease of \$-0.070M is attributed to an assessment for SBIR, (-\$0.052M) Government-Wide Rescission, (\$-0.004M), .07% Pro-Rata (-\$0.014M) .</p> <p>(U) F2887 Funding: The FY2002 increase of \$4,857M is attributed to an increase of (\$4.900M) for VIRGINIA Class SSN Combat System Technology Insertion/Refresh and a decrease of (\$-0.043M) for Section 8123: Management Reform Initiatives.</p>		

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

FEBRUARY 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

VIRGINIA Class Design Development/0604558N

(U) F2887 Funding:

The FY2002 increase of \$4,857M is attributed to an increase of (\$4.900M) for VIRGINIA Class SSN Combat System Technology Insertion/Refresh and a decrease of (\$-0.043M) for Section 8123: Management Reform Initiatives.

(U) F3062 Funding:

The FY2003 increase of \$16,605M is attributed to increases of (\$1.200M) for Submarine MMTT Program and (\$15.500M) for various resource sponser issues and a decrease of (\$-0.095M) for non-pay inflation.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

R-1 SHOPPING LIST - Item No. 122

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 26)

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EXHIBIT R-2a, RDT&E Project Justification					DATE:				
VIRGINIA Class Design Dev/0604558N					FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER							
RDT&E, N/BA-5	0604558N	VIRGINIA Class HM&E Development/F1947							
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	Cost to Complete	Total Cost
Project Cost	127.255	120.103	128.741	125.730	132.895	138.096	123.327	79.335	2229.509
RDT&E Articles Qty									

A (U) Mission Description and Budget Item Justification: (U) This Project encompasses all the ship system development efforts for the VIRGINIA Class Submarine and the Technology Insertion Program for reducing cost and upgrading performance of future hulls by virtue of improvements in ship and combat systems. Technology developments, training, and logistics for developmental items, and VIRGINIA Class test & evaluation are included. This project is essential to achieve balanced platform capability, affordability, and flexibility in a low rate production environment. The thrust of these efforts will be to develop and apply multiple advanced system technologies which are integrated into the design of the VIRGINIA Class Submarine. New technologies are being transitioned from industry and government research and development programs where doing so offers substantial performance improvement and/or affordability payoffs. Transition opportunities include those from the Defense Advanced Research Projects Agency (DARPA) Sensors & Payloads program.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947
<p>(U) Program Accomplishment and Plans:</p> <p>FY 2001 Accomplishments:</p> <p>(U) (\$98.301M) Continued design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; propulsor improvement, electromagnetic signature reduction; and ship control system. Continued shock qualification testing and analyses of various components. Continued system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provided Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Supported ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Technology Insertions include: (1) continued development of Accelerated EM Silencing, Advanced Control System, CAVES Array technology, Advanced Sail; (2) initiated development of Advanced Processor Build Acoustics (APB (A)) 01, Advanced Processor Build Tactical (APB(T)) 01, Tactical Control Information Management (TCIM), and the Improved Pressure Exchanger; and (3) completed interim update to the Total Ship Monitoring System, APB (A) 00 update.</p> <p>(U) (\$14.091M) Continued analyses and evaluations relating to force effectiveness. Conducted analysis in support of force effectiveness assessment and component performance tradeoffs. Maintained cost based approach to VIRGINIA Class Submarine construction through use of IPPD's concurrent engineering philosophy. Continued coordination of VIRGINIA Class Submarine specification at the shipbuilder. Continued cost estimating and validation of cost reduction ideas for VIRGINIA Class Submarine overall design development. Continued environmental compliance and pollution prevention efforts.</p> <p>(U) (\$4.739M) Continued unique logistics and trainers/training development to support the VIRGINIA Class. Items under this line included the: VIRGINIA Ship Control Operator Trainer (VSCOT), On-board Team Trainer Master Controller (OBTT MC), Submarine Multi-Mission Team Trainer (SMMTT), Ship Control Maintenance Trainer (SCMT) and related items.</p> <p>(U) (\$10.124M) Continued the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Planned and coordinated second shipbuilder Test and Evaluation efforts. Provided IPPD support to Commander Operational Test and Evaluation Force (COTF) operational assessments. Prepared test plans, schedules and support associated with developmental testing, conduct Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials and Technical Evaluation. Conducted engineering evaluation of test results. Live Fire Test & Evaluation(LFT&E) modeling and analysis. Continued development of the total ship test plan in support of Developmental Testing (DT) and Operational Testing (OT).</p>		

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2. (U) FY 2002 Plan:

(U) (\$90.625M) Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Continue shock qualification testing and analyses of various components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Technology Insertions include: (1) continue development of Accelerated EM Silencing, CAVES Array technology, the Advanced Sail, APB (A) 01, APB(T) 01, the Improved Pressure Exchanger; (2) initiate development of APB (A) 99 update, APB(A) 02 update, APB(T) 02, Information Assurance; and (3) complete development of the Advanced Control System.

(U) (\$13.753M) Continue analyses and evaluations relating to force effectiveness assessment and component performance tradeoffs. Maintain cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering philosophy. Continue coordination of VIRGINIA Class submarine specification at the shipbuilder. Continue cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continue environmental compliance and pollution prevention efforts.

(U) (\$4.281M) Continue development of trainers/training to support the VIRGINIA Class. This line includes the: VIRGINIA Ship Control Operator Trainer (VSCOT), On-board Team Trainer Master Controller (OBTT MC), Submarine Multi-Mission Team Trainer (SMMTT), Ship Control Maintenance Trainer, and related efforts. "

(U) (\$11.444M) Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Plan and coordinate second shipbuilder Test and Evaluation efforts. Provide IPPD support to Commander Operational Test and Evaluation Force (COTF) operational test OT-IIB at the COATS facility. Prepare test plans, schedules and support associated with developmental testing, conduct Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials and Technical Evaluation. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue development of the total ship test plan in support of DT and OT.

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RDT&E, N/BA-5

VIRGINIA Class Design Dev/0604558N

VIRGINIA Class HM&E Development/F1947

3. (U) FY 2003 Plan:

(U) (\$81.192M) Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), main propulsion unit improvements, weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Continue shock qualification testing and analyses of various components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Technology Insertions include; (1) Continue development of Accelerated EM Silencing, CAVES Array technology, the Advanced Sail ,APB(T) 01, APB(T) 02; (2) initiate development of non-tactical data processing improvements, flexible payload launchers for the advanced sail; (3) complete development of Improved Pressure Exchanger, APB(A) 99, 01, and 02 updates

(U) (\$13.552M) Continue analyses and evaluations relating to force effectiveness assessment and component performance tradeoffs. Maintain cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering philosophy. Continue coordination of VIRGINIA Class submarine specification at the shipbuilder. Continue cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continue environmental compliance and pollution prevention efforts.

(U) (\$5.445M) Continue development of trainers/training to support the VIRGINIA Class. This includes the: VIRGINIA Ship Control Operator Trainer (VSCOT), On-board Team Trainer Master Controller (OBTT MC), Submarine Multi-Mission Team Trainer (SMMTT), Ship Control Maintenance Trainer, Weapons Control Launch Console (WCLC), Emergency Diesel Generator, and related efforts.

(U) (\$28.552M) Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Plan and coordinate second shipbuilder Test and Evaluation efforts. Conduct shipbuilder trials, and dockside testing. Prepare test plans, schedules and support associated with developmental testing, conduct Operational Testing - Phase IIB, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials and Technical Evaluation. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue development of the total ship test plan in support of DT/OT-IIA-IIF.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947
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B. (U) Other Program Funding Summary: (Dollars in Millions)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	To Complete	TOTAL Program
SCN Line 201300 PE: 0204281N	744.475	1766.917	2505.050	2495.643	2441.453	2914.326	2929.180	3692.433	41292.163	66859.120
SCN Line 201310 PE: 0204281N	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	589.200
O&M,N BA-2 1B2B PE: 0204283N	0.000	0.000	0.000	0.000	20.500	20.500	20.000	20.000	cont.	cont.
OPN BA-8 Line Item 094200	0.000	0.000	0.000	0.000	0.000	21.548	243.621	293.958	cont.	cont.

(U) Related RDT&E:

- (U) PE 0603561N (Advanced Submarine System Development)
- (U) PE 0603570N (Advanced Nuclear Power Systems)
- (U) PE 0602121N (Surface Ship Technology)

C. (U) Acquisition Strategy: The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing, with Design expected to complete this year, and has reduced the number of changes typically encountered during construction of the Lead and early follow ships. In September 1997, Congress passed a law allowing the two companies to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, Electric Boat remained the design yard for the VIRGINIA Class Submarine and Newport News Shipyard became a part of the IPPD process. The Program Office is expected to continue the EB/NNS teaming arrangement and is considering a block buy or multi-year procurement acquisition strategy for future ships starting in FY03. Future focus will be to complete ship design, continuance of Logistics products, Technology Insertion and testing for the Virginia Class.

D. (U) Schedule Profile: See attached.

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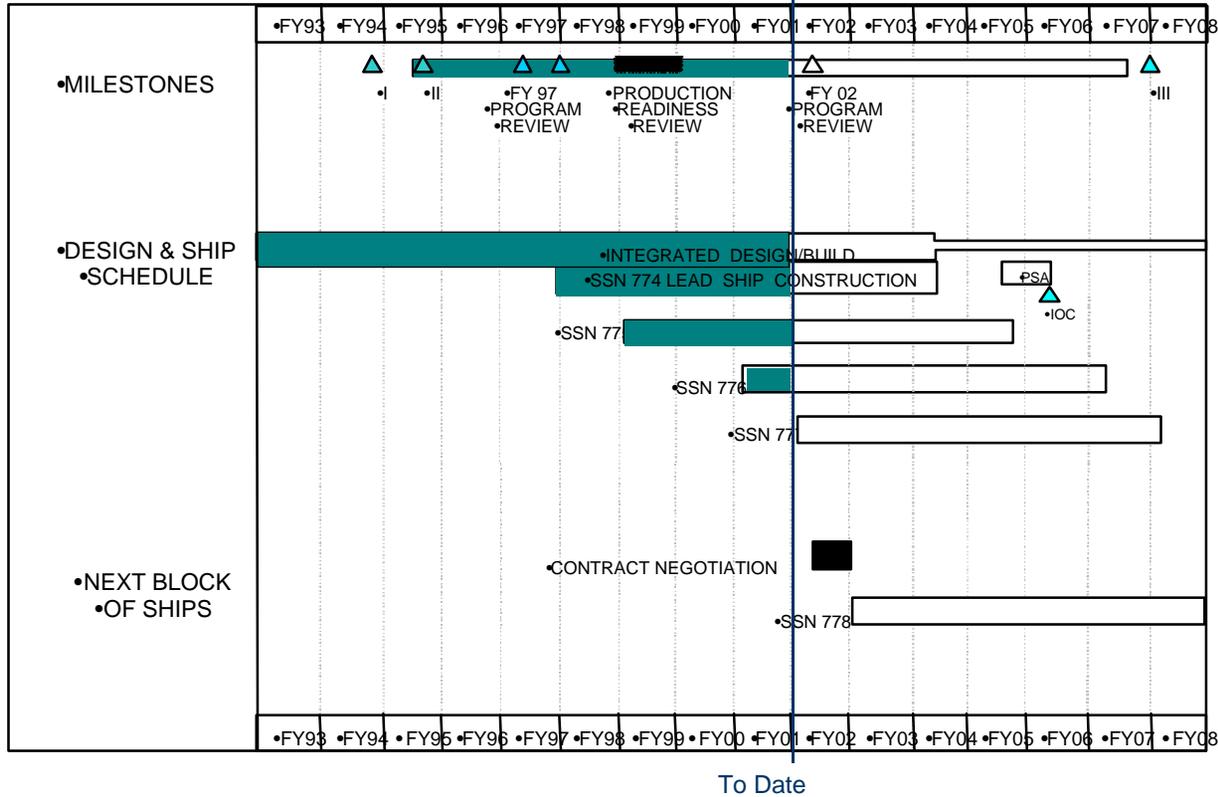
DATE:

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APPROPRIATION/BUDGET ACTIVITY
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PROGRAM ELEMENT NAME AND NUMBER
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Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class HM&E Development/F1947						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Component Development	SS/CPFF	EB-2112 Groton, CT	377.436	44.757	Various	36.913	Various	22.981	Various	51.067	533.154	533.154
Main Propulsion Complex Dev	SS/CPFF	EB-4030 Groton, CT	212.356	15.700	Various	21.000	Various	9.700	Various	12.900	271.656	271.656
Component Development	WR	NSWC Carderock, MD	316.250	37.555	11/00	34.727	11/01	31.337	11/01	90.990	510.859	N/A
Component Development	WR	NAWC Orlando, FL	16.406	2.471	11/00	3.217	11/01	2.591	11/01	15.052	39.737	N/A
Component Development	WR	NUWC Newport, RI	65.606	4.808	11/00	3.497	11/01	1.576	11/01	1.958	77.445	N/A
Technology Insertion	Various	Miscellaneous	14.951	3.091	Various	1.714	Various	17.552	Various	2.905	40.213	N/A
Component Development	Various	Miscellaneous	194.629	2.523	Various	2.330	Various	9.901	Various	12.042	221.425	N/A
Subtotal Product Development			1197.634	110.905		103.398		95.638		186.914	1694.489	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Not Applicable.												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class HM&E Development/F1947						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY01 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
Test & Evaluation	WR	NSWC Carderock, MD	3.493	5.914	11/00	4.526	11/01	13.952	11/01	135.762	163.647	N/A
Test & Evaluation	WR	NUWC, Newport, RI	6.791	2.186	11/00	2.665	11/01	8.856	11/01	83.682	104.180	N/A
Test & Evaluation	C/CPAF	EG&G-C6411 Rockville, MD	3.414	1.370	Various	0.000	Various	0.000	Various	0.000	4.784	27.588
Test & Evaluation	Various	Miscellaneous	6.750	1.024	Various	4.253	Various	5.744	Various	149.574	167.345	N/A
Subtotal T&E			20.448	10.494		11.444		28.552		369.018	439.956	N/A
Remarks:												
Contractor Support Services	C/CPAF	EG&G-C6411 Rockville, MD	15.681	5.856	Various	0.000	Various	0.000	Various	0.000	21.537	21.537
Contractor Spt Services/Award Fees	C/CPAF	EG&G-C6411 Rockville, MD	1.032	0.000	Various	0.000	Various	0.000	Various	0.000	1.032	1.032
Contractor Support Services	Various	Miscellaneous	19.232	0.000	Various	5.261	Various	4.551	Various	43.451	72.495	72.495
Subtotal Management			35.945	5.856		5.261		4.551		43.451	95.064	
Remarks:												
Total Cost			1254.027	127.255		120.103		128.741		599.383	2229.509	N/A
Remarks:												

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Exhibit R-3, Project Cost Analysis
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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER						
RDT&E, N/BA-5	VIRGINIA Class Design Dev/0604558N		VIRGINIA Class Combat System Development/F1950						
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	73.387	79.707	92.907	62.390	51.839	45.609	59.299	0.000	1065.996
RDT&E Articles Qty									
<p>A. (U) Mission Description and Budget Item Justification: (U) This project encompasses the top level systems development, test and integration into the ship of the VIRGINIA Class Submarine C3I System (formerly referred to as Combat Systems), which includes multiple subsystems. The scope of the system is expanded from Sonar and Combat Control subsystems to include AN/BLQ-10 Electronic Support (ES) Measures, Exterior Communications, Submarine Regional Warfare System, Navigation, Total Ship Monitoring, Imaging, Tactical Acoustic Communications, Radar, Interior Communications, Tactical Support Devices, Fiber Optic Cable Subsystem, and Special Purpose Subsystems, such as Battle Force Team Trainer and others. VIRGINIA Class Submarine specific development efforts including requirements definition, software, hardware development, software/hardw test, prototype production, and electronic integration as well as physical integration into the platform.</p> <p>(U) VIRGINIA Class Submarine implementation approach is based on Open System, Commercial-off-the-Shelf (COTS) Non-Developmental Items or subsystems. The program leverages on-going subsystems developments or developing new subsystems where needed to satisfy VIRGINIA Class requirements. The recurring cost of VIRGINIA Class Submarine C3I Systems is being reduced to meet the program's affordability goals. Modifications to many subsystems must be developed to: (1) reduce the shipbuilding and construction recurring costs through the use of COTS components; (2) use proven computer technologies to evolve to an Open System design; (3) enhance capabilities to support expanded operational requirements, reduced manning, and reduced shipboard component footprint.</p> <p>(U) To meet the collective future threat, the submarine force must operate as effectively in littoral regions as it traditionally has in open ocean. Close coordination with surface battle groups and airborne units is essential to mission accomplishment. To meet the VIRGINIA Class Submarine mission, the following capabilities are provided by the VIRGINIA Class Submarine C3I System: (1) Passive and Active detection of multiple contacts, including early warning threat determination through processing and analysis of sensor data; (2) classification of sensor data for the purpose of identifying contacts; (3) localization (tracking) of contacts through target motion analysis; (4) preset, launch, and control of weapons and countermeasures; (5) improved communication and connectivity with other battle group elements, airborne units, and special operations forces; (6) incorporation of vertical launch system to enhance strike warfare; and (7) more effective covert surveillance through video imaging with onboard digital enhancement capabilities, and improved electronic warfare analysis capabilities.</p>									

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class Combat System Development/F1950
<p>(U) Accomplishments and Plans:</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">• (U) (\$24.186M) System level development activities continued in the following areas: development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; conducted system engineering functions such as requirements management, interface control, test and evaluation planning to support formal DT/OT; and began C3I System Integration and Interface Operability Testing. Began development of system changes identified by integration efforts. Continued development of technology refreshment changes to C3I System/subsystems.• (U) (\$49.201M) Continued detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Conducted operability and integration testing. Continued development of technology refreshment changes to S/CC/A subsystems. Began integration of Tactical Tomahawk capability into S/CC/A. <p>2. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">• (U) (\$44.365M) Complete initial system level development activities continue in the following areas: development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; conduct system engineering functions such as requirements management, interface control, test and evaluation planning to support formal DT/OT; and complete C3I System Integration and Interface Operability Testing. Continue development of system changes identified during integration efforts. Continue development of technology refreshment changes to C3I System/subsystems.• (U) (\$35.342M) Complete detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Continue development of S/CC/A subsystem changes identified during integration efforts. Continue development of deliveries for technology refreshment changes to S/CC/A subsystems. Continue integration of Tactical Tomahawk capability into S/CC/A.		

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VIRGINIA Class Combat System Development/F1950

3. (U) FY 2003 PLAN:

- (U) (\$57.511M) Continue development of system changes identified during integration efforts. Continue development of technology refreshment changes to C3I System/subsystems.
- (U) (\$35.396M) Continue development of S/CC/A subsystem changes identified during integration efforts. Continue development of technology refreshment changes to S/CC/A subsystems. Continue integration of Tactical Tomahawk capability into S/CC/A.

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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME & NUMBER			PROJECT NAME AND NUMBER																																																													
RDT&E, N/BA-5	VIRGINIA CLASS DESIGN DEV/0604558N			VIRGINIA Class Combat System Development/F1950																																																													
<p>B. (U) Other Program Funding Summary: (Dollars in Millions)</p> <table border="1"> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>TOTAL Program</th> </tr> </thead> <tbody> <tr> <td>SCN Line 201300 PE: 0204281N</td> <td>744.475</td> <td>1766.917</td> <td>2505.050</td> <td>2495.643</td> <td>2441.453</td> <td>2914.326</td> <td>2929.180</td> <td>3692.433</td> <td>41292.163</td> <td>66859.120</td> </tr> <tr> <td>SCN Line 201310 PE: 0204281N</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>589.200</td> </tr> <tr> <td>O&M,N BA-2 1B2B PE: 0204283N</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>20.500</td> <td>20.500</td> <td>20.000</td> <td>20.000</td> <td>cont.</td> <td>cont.</td> </tr> <tr> <td>OPN BA-8Line Item 094200</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>21.548</td> <td>243.621</td> <td>293.958</td> <td>cont.</td> <td>cont.</td> </tr> </tbody> </table> <p>(U) Related RDT&E:</p> <ul style="list-style-type: none"> (U) PE 0603504N (Advanced Submarine Combat Systems Development) (U) PE 0603561N (Advanced Submarine System Development) (U) PE 0603562N (Submarine Tactical Warfare Systems) (U) PE 0603570N (Advanced Nuclear Power Systems) (U) PE 0604503N (Submarine System Equipment Development) (U) PE 0604574N (Navy Tactical Computer Resources) (U) PE 0604777N (Navigation/ID Systems) (U) PE 0101226N (Submarine Acoustic Warfare Development) (U) PE 0604562N (Submarine Tactical Warfare System) (U) PE 0604524N (Submarine Combat System) 												FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	TOTAL Program	SCN Line 201300 PE: 0204281N	744.475	1766.917	2505.050	2495.643	2441.453	2914.326	2929.180	3692.433	41292.163	66859.120	SCN Line 201310 PE: 0204281N	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	589.200	O&M,N BA-2 1B2B PE: 0204283N	0.000	0.000	0.000	0.000	20.500	20.500	20.000	20.000	cont.	cont.	OPN BA-8Line Item 094200	0.000	0.000	0.000	0.000	0.000	21.548	243.621	293.958	cont.	cont.
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<p>C. (U) Acquisition Strategy: The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing, with Design expected to complete this year, and has reduced the number of changes typically encountered during construction of the Lead and early follow ships. In September 1997, Congress passed a law allowing the two companies to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, Electric Boat remained the design yard for the VIRGINIA Class Submarine and Newport News Shipyard became a part of the IPPD process. The Program Office is expected to continue the EB/NNS teaming arrangement and is considering a block buy or multi-year procurement acquisition strategy for future ships starting in FY03. Future focus will be to complete ship design, continuance of Logistics products, Technology Insertion and testing for the Virginia Class.</p> <p>D. (U) Schedule Profile: See attached.</p>		

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DATE:

FEBRUARY 2002

APPROPRIATION/BUDGET ACTIVITY

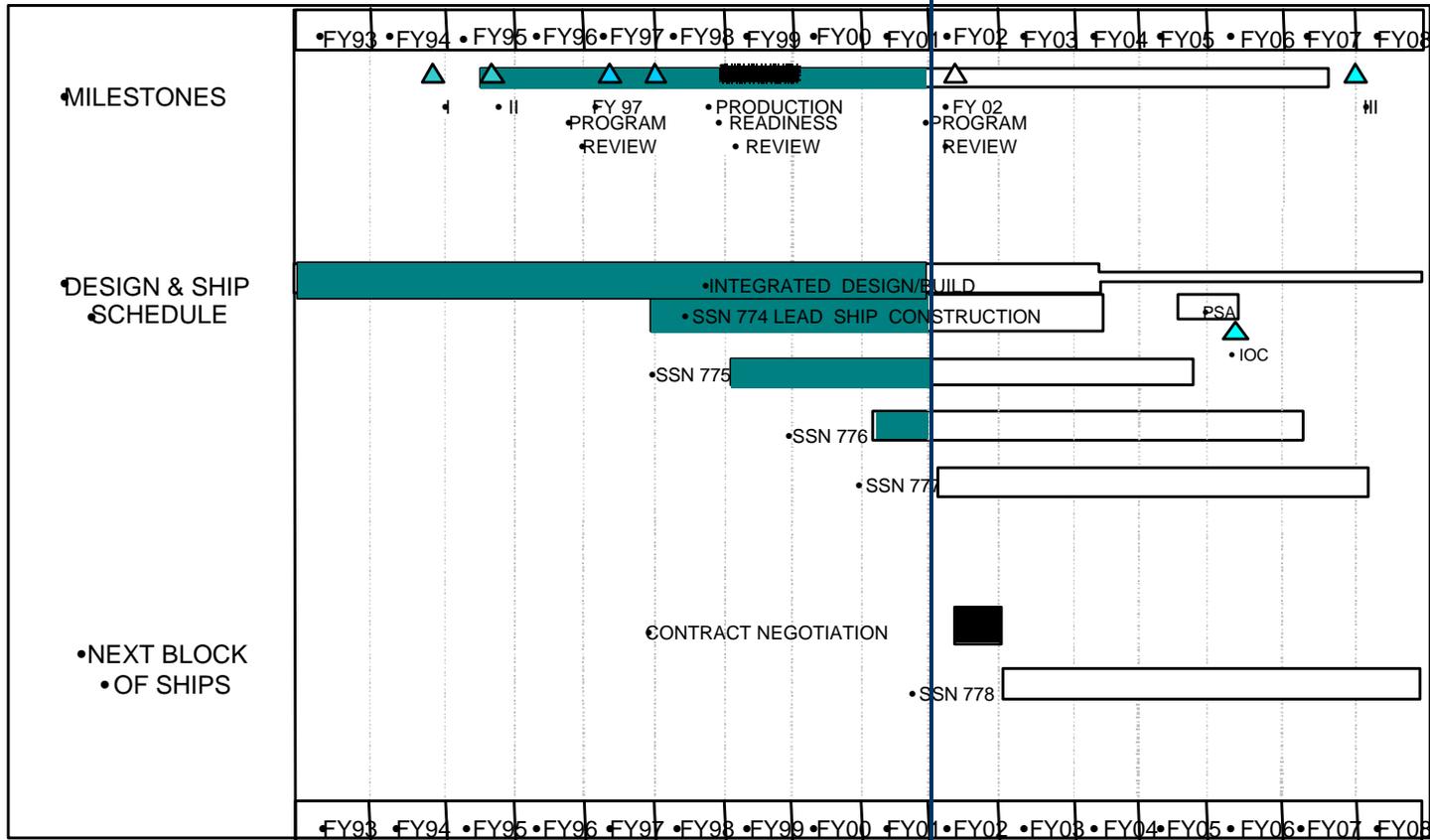
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA-5

VIRGINIA Class Design Dev/0604558N

VIRGINIA Class Combat System Development/F1950



To Date

R-1 SHOPPING LIST - Item No. 122

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 18 of 26)

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CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)						DATE: FEBRUARY 2002						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			0604558N		VIRGINIA Class Combat System Development/F1950							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	194.543	23.139	Various	6.799	Various	12.878	Various	6.169	243.528	243.528
C3I Prime Contract E&MD Award Fee	C/CPAF	Lockheed Manassas, VA	4.608	1.400	Various	1.400	Various	0.300	Various	0.408	8.116	8.116
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA	1.000	8.100	Various	8.619	Various	3.135	Various	10.411	31.265	31.265
Advanced Display Sys (AN/UYQ-70)	SS/CPFF										0.000	
	CPIF	Lockheed St. Paul, MN	20.494	1.490	11/00	2.000	11/01	1.900	11/02	5.400	31.284	31.284
Multi-Purpose Processor	SS/CPIF	Digital Sys Fairfax, VA	41.449								41.449	41.449
Multi-Purpose Processor	SS/CPIF	Lockheed Manassas, VA	1.755								1.755	1.755
Photonics	C/CPIF	Kollmorgen Northhampton, MA	23.174	0.090	11/00	0.194	11/01	0.204	11/02	1.060	24.722	24.722
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, MA	4.060								4.060	4.060
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	37.475	0.195	11/00	0.203	11/01	0.209	11/02	0.876	38.958	38.958
Platform Integration	SS/CPFF	EB Corp Groton, CT	20.095	1.979	11/00	5.820	11/01	2.700	11/02	11.150	41.744	41.744
Platform Integration	SS/CPFF	NNews Shipbuilding NNews, VA	2.725	0.340							3.065	3.065
Integrated Electronic Mast	SS/CPIF	Goleta Portsmouth, RI	8.897								8.897	8.897
Tactical Simulator	SS/CPFF	Goleta Portsmouth, RI	2.750								2.750	2.750
High Frequency Sail Array	SS/CPFF	Applied Research Austin, TX	3.273								3.273	3.273
Navigation/Radar	SS/CPFF	Sperry Corp Charlottesville, VA	6.153								6.153	6.153
Technology Refreshment	Various	Various/TBD		3.196	Various	6.036	Various	10.384	Various	44.899	64.515	N/A
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500								2.500	2.500
Technical Direction Agent	N/A	NUWC Newport, RI	155.388	16.181	Various	12.280	Various	9.660	Various	38.718	232.227	N/A

R-1 SHOPPING LIST - Item No. 122

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 19 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)							VIRGINIA Class Design Dev/0604558N			DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			0604558N		VIRGINIA Class Combat System Development/F1950							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Technology Refreshmnet	C/CPFF	Progeny Systems,Manassas,VA		6.811	11/00	2.000	11/01	1.000	11/01		9.811	9.811
Systems Engineering	N/A	NSWC Cardock, MD	3.355	0.315	11/00	0.345	11/01	0.350	11/02	1.000	5.365	N/A
Systems Engineering	N/A	NSWC Crane, IN	2.845	0.205	11/00	0.205	11/01	0.210	11/02	0.600	4.065	N/A
Systems Engineering	N/A	SSC Charleston, SC	2.333								2.333	N/A
Systems Engineering	N/A	SSC San Diego, CA	1.535								1.535	N/A
Systems Engineering	N/A	NUWC Keyport, WA	2.474	1.098	11/00	1.085	01/01	1.085	11/02	2.500	8.242	N/A
Miscellaneous	Various	Various	25.367	5.440	Various	28.271	Various	45.798	Various	58.673	163.549	N/A
Subtotal Product Development			568.248	69.979		75.257		89.813		181.864	985.161	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks: Not Applicable.												

R-1 SHOPPING LIST - Item No. 122

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 20 of 26)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 3)							DATE: FEBRUARY 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			0604558N		VIRGINIA Class Combat System Development/F1950							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Test & Evaluation	Various	Various	0.000			0.490	Various	0.300	Various	21.986	22.776	N/A
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.490		0.300		21.986	22.776	
Remarks:												
Contractor Engineering Support											0.000	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD				3.960	Various	2.794	Various	15.287	22.041	22.041
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	11.082	3.135	Various						14.217	14.217
CSS/ETS Award Fee	C/CPFF	EG&G Rockville, MD	0.906	0.273	Various						1.179	1.179
Contractor Support Services/ETS	C/CPFF	EG&G Rockville, MD	8.857								8.857	8.857
Contractor Support Services/ETS	C/CPFF	SWL Inc. Vienna, VA	5.705								5.705	5.705
Contractor Support Services/ETS	C/CPFF	American Sys Chantilly, VA	2.099								2.099	2.099
Miscellaneous	Various	Various	3.961								3.961	3.961
Program Management Support											0.000	
Travel											0.000	
Subtotal Management			32.610	3.408		3.960		2.794		15.287	58.059	
Remarks:												
Total Cost			600.858	73.387		79.707		92.907		219.137	1065.996	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 122

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 21 of 26)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER SUBMARINE TRAINING DEVICE MODS/ F3062							
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	Cost to Complete	Total Cost
Project Cost	N/A	N/A	16.605	6.458	4.071	0.000	0.000	0.000	27.134
RDT&E Articles Qty									

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shorebased training facilities capable of training submarine combat system team personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment.

The Combat Control System (CCS) MK 1 and CCS MK 2 are installed on SSN and SSBN (TRIDENT) Class submarines, and there are currently plans to further upgrade these systems with the next H/W and S/W revisions which provide enhanced warfighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) Phased upgrades are also being installed with the next revision which provides enhanced warfighter capabilities. These CCS and ARCI upgrades directly impact shore based Team Trainers. In addition, the Advanced Processing Builds (APB), which feed technology insertion into the CCS/Acoustic development, also impact the trainers.

The SMMTT supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines. The SMMTT provides individual operators and combat teams the opportunity to train ashore, prior to, and between deployments. The shore based training provides a means of maintaining team proficiency in stand alone or in combined team mode prior to ship deployment.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 PLANS:

(U) n/a

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-5	VIRGINIA Class Design Dev/0604558N	SUBMARINE TRAINING DEVICE MODS/ F3062

2. (U) FY 2002 Plan:

(U) n/a

3. (U) FY 2003 Plan:

(U) (\$16.605M) Develop / integrate new software capabilities and system interfaces. Initiate development of display software.

B. (U) Other Program Funding Summary: (Dollars in Millions)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	Complete	Program
OPN Line 566100 PE: 0804731N	23.184	30.084	17.233	12.702	7.166	27.384	25.893	13.841	cont.	cont.

(U) Related RDT&E: n/a

C. (U) ACQUISITION STRATEGY: The SMMTT program phase 3 software development is accounted for in this RDT&E line. All production kits and software procured in OPN BLI 566100 PE 0804731N.

D. (U) SCHEDULE PROFILE: See attached.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

FEBRUARY 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

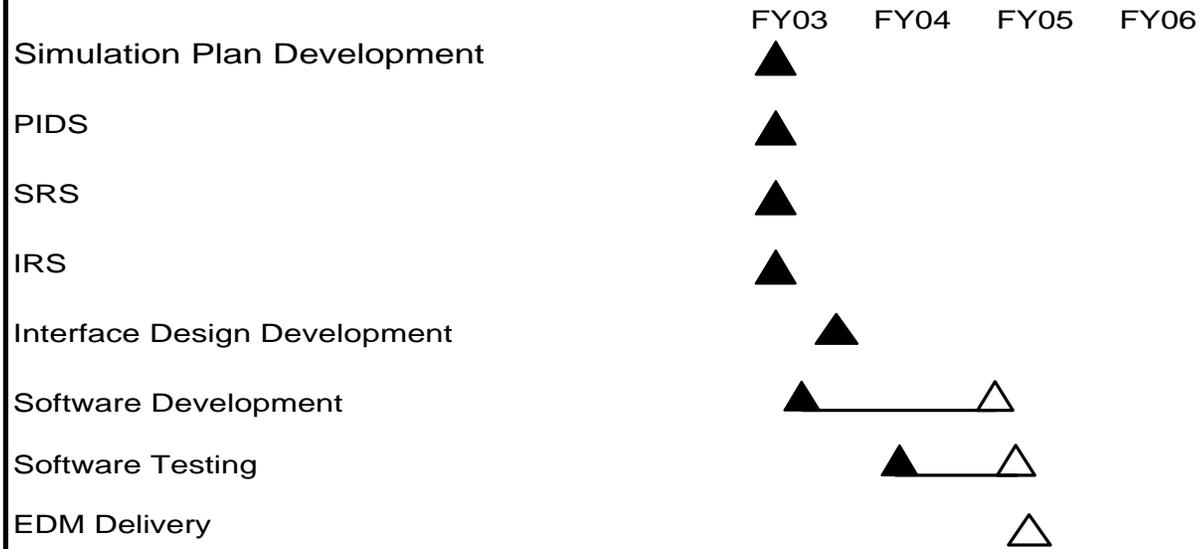
PROJECT NAME AND NUMBER

RDT&E, N/BA-5

VIRGINIA Class Design Dev/0604558N

SUBMARINE TRAINING DEVICE MODS/ F3062

SMMTT Phase 3 Schedule



R-1 SHOPPING LIST - Item No. 122

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 24 of 26)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT VIRGINIA Class Design Dev/0604558N			PROJECT NAME AND NUMBER SUBMARINE TRAINING DEVICE MODS/ F3062						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Component Development	WR/RC	NSWCCD Bethesda, MD						16.605	various	10.529	27.134	N/A
Subtotal Product Development			0.000	0.000		0.000		16.605		10.529	27.134	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 122

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 26)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 3)								DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			SUBMARINE TRAINING DEVICE MODS/ F3062						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	N/A
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	N/A
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		0.000		16.605		10.529	27.134	N/A
Remarks:												

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		6.322	5.711	3.981	4.262	3.102	3.106	3.148	0.000	1679.167
SSN-21 Development/F1946		6.322	5.711	3.981	4.262	3.102	3.106	3.148	0.000	1679.167
Quantity of RDT&E Articles										0.000

A. (U) Mission Description and Budget Item Justification: The SEAWOLF submarine is a multi-mission ship that will introduce unprecedented performance capabilities. It is the quietest, most heavily-armed attack submarine the Navy has ever built. The design of the SEAWOLF is based on an extensive research and development program and incorporates technological advancements to provide: order of magnitude improvement in ship quieting; improved acoustic sensors; more capable combat systems; greater weapon capacity and capability; quieter launch; weapon launch at high ship speed; advanced reactor; improved performance machinery program; an advanced propulsor; increased operating depth; improved ship control; and enhanced survivability.

(U) Program Accomplishments and Plans:

1. (U) FY 2001 Accomplishments :

- (U) (\$2.214) Continued Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).
- (U) (\$1.069) Funded Component Shock Tests and Analysis including Wide Aperture Array, Ventilation Hangers and components tested during AB1 Improved Propulsion Machinery Program Shock Platform trials.
- (U) (\$3.039) Re-engineered and corrected deficiencies in Non-Propulsion Electronics (NPE) systems including Ship Control System, Exterior Communications System (ECS), and Total Ship Monitoring System (TSMS). Investigated acoustic deficiencies relating to Propulsor, Sail and Main Ballast Tanks. Continued risk management efforts in all high risk areas.

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 7)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

SSN-21 Development/0604561N

2. (U) FY 2002 Plan:

- (U) (\$.620) Conduct the analysis and reporting in compliance with Class plans and Director, Operational Test & Evaluation (DOT&E) requirements resulting from the Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).
- (U) (\$.535) Conduct component shock tests and analysis and continue shock qualification for Contractor Furnished Equipment (CFE) and Government Furnished Equipment (GFE) in compliance with Class plans and DOT&E requirements.
- (U) (\$4.556) Re-engineering and correcting deficiencies in Non-Propulsion Electronics Systems including Ship Control System and Exterior Communications System. Multifunctional Crypto System Assessment and Development. Investigation of acoustic deficiencies, including wind tunnel testing associated with Sail and Main Ballast Tanks. Continue risk management efforts in all high risk areas.

3. (U) FY 2003 Plan

- (U) (\$.354) Complete the analysis and reporting in compliance with Class plans and DOT&E requirements resulting from the Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).
- (U) (\$.385) Conduct component shock tests and analysis and continue shock qualification for Contractor Furnished Equipment (CFE) and Government Furnished Equipment (GFE) in compliance with Class plans and DOT&E requirements.
- (U) (\$3.242) Re-engineering and correction of Non-Propulsion Electronics (NPE) Systems, including Ship Control System, and Exterior Communication System (ECS). Investigation of acoustic deficiencies associated with Main Ballast Tanks and Sail. Continue risk management efforts in all high risk areas.

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 7)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5						SSN-21 Development/0604561N			
B. (U) Program Change Summary:									
						FY 2001	FY 2002	FY 2003	
(U) FY 2002 President's Budget:						6.557	5.770	4.812	
(U) Appropriated Value:						6.617	5.770	0.000	
(U) Adjustments to FY2001/2002						-0.295	-0.059	-0.831	
Appropriated Value/FY 2002									
President's Budget:									
(U) FY 2003 Pres Budget Submit:						6.322	5.711	3.981	
(U) <u>Change Summary Explanation:</u>									
<p>(U) Funding: The FY01 decrease is a result of the Small Business Innovation Research (SBIR) Assessment in accordance with 15 USC 638 (-\$89K), ASN (RD&A) administrative hold to satisfy BTR 01-14 (-\$130K), a .7% Pro-Rata Reduction (across the board) (-\$46K), a Government-wide Rescission of .22% (\$-14K), and cancelled accounts bills assessments (-\$16K). The FY 02 decrease is a result of Management Reform Section 8123 (-\$51K) and a FFRDC reduction (-\$8K). The FY 03 decrease is a result of a BSO realignment (-\$15K), reduction for SYSCOM Contractor Support (-\$655K), and various program adjustments (NWCF Rates) (-\$161K).</p>									
(U) Schedule: No Schedule change.									
(U) Technical: No change.									
C. (U) Other Program Funding Summary:									
								To	Total
(U) SCN #201200								Complete	Cost
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007		
(U) MILCON P-398	0.277	11.830	1.302	24.592	0.253	0.000	0.000	0	8216.217
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	27.300

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 7)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

SSN-21 Development/0604561N

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
(U) OPN #51000/05, #094100/05	11.925	7.979	18.737	0.189	9.905	10.067	10.266	0	381.459

(U) Related RDT&E:

(U) PE 0603570N (Advanced Nuclear Power Systems)

(U) PE 0604524N (Submarine Combat Systems)

(U) PE 0604567N (Ship Contract Design/Live Fire T&E)

D. (U) Acquisition Strategy:

(U) To deliver three SEAWOLF submarines under cost cap

(U) To continue to correct SEAWOLF Acoustics deficiencies.

(U) To increase commonality with Virginia Class Submarines.

(U) Continue to review all areas for possible cost reductions.

E. (U) Schedule Profile:

(U) See attached Planning Schedule Program

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification

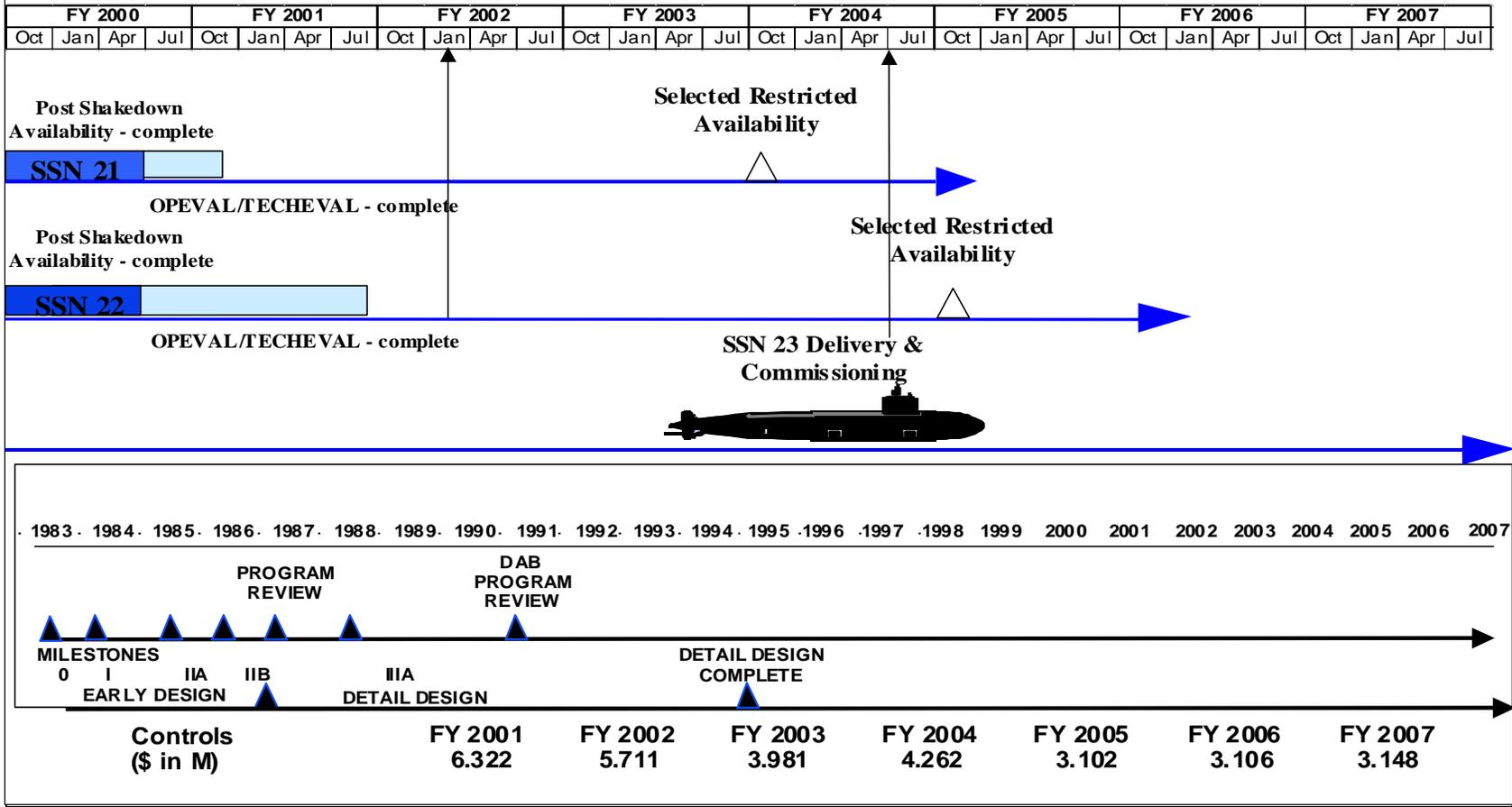
(Exhibit R-2, page 4 of 7)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: February 2002
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N
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Program Timeline



R-1 SHOPPING LIST - Item No. 123

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-21 Development/0604561N			SSN-21 Development/F1946						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	SS/CPFF	General Dynam Groton, CT	368.549	0.332	Various	0.150	Various	0.250		4.132	373.413	373.413
Systems Engineering	SS/CPFF	NNS Newport News, VA	117.679	0.293	Various	0.320	Various	0.414		0.463	119.169	119.169
Systems Engineering	WR/RC	NSWC Carderock, MD	315.288	1.216	Various	1.790	Various	1.093		3.440	322.827	
Systems Engineering	WR	NUWC Newport, RI	47.795	0.843	Various	0.308	Various	0.100		0.000	49.046	
Systems Engineering	Various	Various	466.959	0.480	Various	1.743	Various	1.770		2.230	473.182	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			1316.270	3.164		4.311		3.627		10.265	1337.637	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 123

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 7)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5			SSN-21 Development/0604561N				SSN-21 Development/F1946					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	SS/CPFF	General Dynam Groton, CT	68.994	0.000		0.000		0.000		0.000	68.994	
Developmental Test & Evaluation	WR	NSWC Carderock, MD	95.350	0.450	Various	0.000	Various	0.254	Various	0.350	96.404	
Developmental Test & Evaluation	Various	Various	122.093	1.814	Various	0.690	Various	0.100	Various	3.003	127.700	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			286.437	2.264		0.690		0.354		3.353	293.098	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support & ETS	Various	Various	46.828	0.894	Various	0.710	Various	0.000		0.000	48.432	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			46.828	0.894		0.710		0.000		0.000	48.432	
Remarks:												
Total Cost			1649.535	6.322		5.711		3.981		13.618	1679.167	
Remarks:												

R-1 SHOPPING LIST - Item No. 123

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 7)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Submarine Tactical Warfare System / 0604562N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		25.435	38.884	13.975	21.326	42.904	44.792	45.674	CONT.	CONT.
SSN CCS (IMP) (ENG)		25.435	38.884	13.975	21.326	42.904	44.792	45.674	CONT.	CONT.
Quantity of RDT&E Articles										
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program develops software upgrades to integrate improved weapons capabilities within submarine Combat Control System (CCS) MK1, MK2, and AN/BSY-1 (Combat Control) and, as a part of Obsolete Equipment Replacement (OER), the program develops improvements to hardware which has become increasingly difficult and not economical to maintain. The thrust of the CCS Improvement program is the fleet introduction of CCS MK2 Program D0 and the development of CCS MK2 Program D0 Blocks 1 and 2. CCS MK2 converged multiple submarine combat system developments into a single effort to minimize submarine life cycle costs, across SSN 688, SSN 688I and SSBN 726 Classes. CCS MK2 Program D0 provides a modular software architecture, introduces Tomahawk Block 3 and Harpoon Block 1C capabilities, introduces Advanced Capability (ADCAP) on TRIDENT, and replaces additional obsolete equipment. CCS MK2 Program D0 Block 1 integrates CCS MK2 into AN/BSY-1 systems, replaces additional obsolete equipment, incorporates a direct interface to the Global Positioning System, incorporates Global Command Control System-Maritime (GCCS-M) (formerly known as Joint Maritime Command Information System (JMCIS)) into CCS MK2, and implements Advanced Tomahawk Weapon Control System (ATWCS), ADCAP torpedo improvements and several other miscellaneous enhancements. CCS MK2 Program D0 Block 2 incorporates into submarine CCS anticipated upgrades to ADCAP, and Tomahawk and implements additional OER. AN/BSG-1 (formerly known as Tomahawk Land Attack Missile – Nuclear (TLAM-N) Portable Launching System (PLS)) provides SSN submarines with a stand-alone TLAM-N missile launching capability.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> (U) (\$11.346) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class. (U) (\$3.161) Complete post-OPEVAL development effort to CCS MK2 Block 1C. (U) (\$4.565) Continue development of AN/BSG-1 and conduct developmental and operational testing. (U) (\$6.000) Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Technology Products into Backfit Submarine Combat Control Programs. (U) (\$0.363) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 7)

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

Submarine Tactical Warfare System / 0604562N

2. (U) FY 2002 PLAN:

- (U) (\$21.717) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.
- (U) (\$10.000) Mitigate combat systems obsolescence, improve life-cycle cost, increase commonality and provide advanced war fighting capability to the submarine fleet based on the CCS MK 2 combat system.
- (U) (\$5.606) Continue development of AN/BSG-1 and mission distribution system upgrades.
- (U) (\$1.561) Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Technology Products into Backfit Submarine Combat Control Programs.

3. (U) FY 2003 PLAN:

- (U) (\$8.523) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.
- (U) (\$2.277) Develop changes to combat control weapons simulation and equipment to enhance TOMAHAWK system reliability.
- (U) (\$2.000) Complete development of AN/BSG-1 and mission distribution system upgrades.
- (U) (\$1.175) Integration of Advanced Tactical Software, Commercial Off-The-Shelf Technology and Government Off-The-Shelf Technology Products into Backfit Submarine Combat Control Programs.

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-2, RDT&E Budget Item Justification

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

Submarine Tactical Warfare System / 0604562N

B. (U) PROGRAM CHANGE SUMMARY:

	FY 2001	FY 2002	FY 2003
FY 2002 President's Budget:	26.249	29.246	
Appropriated Value	26.492	38.884	
Adjustments to FY2001/2002 Appropriated Value/ FY 2002 President's Budget:	-1.057	9.638	13.975
FY 2003 President's Budget Submit:	25.435	38.884	13.975

(U) CHANGE SUMMARY EXPLANATION:

(U) **Funding:** FY01 reduction of (-\$1.057) due to 7% Pro-Rat (-\$0.185), Government - Wide Rescission, June 2001 BTRs (-\$0.400), FY01 SBIR (-\$0.363) and 01 Actuals (-\$0.051).

FY02 increase of (\$9.638) reflects (\$10.000) for Submarine Combat System Modernization Program to mitigate combat systems obsolescence, improve life-cycle cost, increase commonality and provide advanced war fighting capability to the submarine fleet based on the CCS MK2 combat system, (-\$0.346) for Management Reform Int. (-\$0.016) for FFRDC.

FY03 reduction of (-\$0.101) reflects (-\$0.080) for Nonpay Inflation, (-\$0.070) for Carryover and (\$0.049) for NWCF Rates.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
OPN/BA-4 54200	19.3	40.3	46.3	59.8	72.0	66.8	84.1	CONT.	CONT.

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 7)

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

Submarine Tactical Warfare System / 0604562N

(U) Related RDT&E:

(U) PE 0204229N (Tomahawk & Tomahawk Missile Planning Center)

(U) PE 0205632N (MK 48 ADCAP)

(U) PE 0603504N (Advanced Submarine Combat Systems Dev.)

(U) PE 0604503N (Submarine System Equipment Dev.)

(U) PE 0604707N (Submarine Electronic Warfare Architecture/Eng. Support)

D. (U) ACQUISITION STRATEGY:

CCS MK2 Block 1C:

- CCS MK2 Block 1C utilizes an open architecture in support of new and upgraded Government and Commercial Off-The-Shelf products and insertion of new weapons capabilities.
- Release-to-Fleet of MK2 Block 1C baseline in Dec 2000.
- Award of contract to Raytheon in Dec 2000 for changes to the MK2 Block 1C for incorporation of Tactical Tomahawk and commonality with VIRGINIA.
- Preliminary Design Review for MK2 Block 1C in Feb 2001.
- Program Review and Milestone Decision Authority conducted Sep 2001.
- Critical Design Review is Feb 2002.
- Release-to-Fleet is Mar 2003.
- Further CCS MK2 Block 1C development upgrades (ECP 004 & beyond) will be competed commencing with contract award 2nd QTR 2003.
- APB(T) products associated with CCS MK2 Block 1C Release-to-Fleet Jul 2002, Sep 2003, Sep 2004.

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

Submarine Tactical Warfare System / 0604562N

Combat Control Development Schedule

E. Schedule Profile:

		FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
		O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S
CCS MK2 PROGRAM D0 BLOCK 1C	MOD 2	SDCT 2 Phase I 11 2 6 DT OT	10 MS III						
	MOD 0/1	10 2 SDCT 2 5 DT/OT	10 MS III						
	MOD 3	11 2 SDCT		6 FOT&E					
	TACTICAL TOMAHAWK ECP		12 AWARD	PHASE 1 8 11 1 DT/OT RTF	PHASE 2 4 7 9 DT/OT RTF				
	MK2 BLK2 WEAPONS LAUNCH H/W IMPROVEMENTS						8	3 5 DT/OT RTF	
	APB(T)			7 RTF		9	9	9	
	WC/TC Segregation			4		9			
AN/BSG-1				8 SDCT	8 DT	10 1 OT MS III			

LEGEND: SCHEDULED COMPLETION COMPLETED

PE: 0604562N Proj: F0236

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-2, RDT&E Budget Item Justification

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R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Tactical Warfare Sys/0604562N			SSN Combat Control System Improv (ENG) / F0236						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY01 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
AN/BSG-1 System Development	CPIF	Raytheon Portsmouth, RI	12.843	1.800		1.500				0.000	16.143	
Ancillary Hardware Dev (AN/BSG-1)	PD	PEO(W) Patuxent River,MD	7.503	0.500		1.000		0.000		0.000	9.003	
Government Engineering	WR	NUWC Newport, RI	36.836	7.157		9.005		3.185		CONT.	CONT.	
TOMAHAWK Reliability	SBIR	Progeny	0.074			1.561		1.200		CONT.	CONT.	
CSS MK2 Block 1C ECP	FFRDC	MITRE		0.378		0.380		0.400		CONT.	CONT.	
COTS Hardware & Software	CPFF	DDL Omni		6.000	03/01	1.000		1.175		CONT.	CONT.	
Subtotal Product Development			57.256	15.835		14.446		5.960		CONT.	CONT.	
Remarks:												
	Contract Block 1C AN/BSG-1	Award/Oblig Dec 00 Jun 97										
Development Support Equipment											0.000	
Software Development	CPFF	Raytheon Portsmouth, RI		8.500	12/00	21.138		6.000		CONT.	CONT.	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	8.500		21.138		6.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST · ITEM NO. 124

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 7)

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5			Submarine Tactical Warfare Sys/0604562N				SSN Combat Control System Improv (ENG) / F0236					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	Various	Various	5.200	0.500		2.100		1.200		CONT.	CONT.	
Operational Test & Evaluation	Various	Various	5.569	0.500		1.100		0.500		CONT.	CONT.	
Test & Evaluation	Various	Various	1.295	0.000		0.000		0.000			1.295	
GFE												
Subtotal T&E			12.064	1.000		3.200		1.700		CONT.	CONT.	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	CPFF	EG&G Arlington, VA	8.481	0.000		0.000		0.215		CONT.	CONT.	
Travel	PD	NAVSEA Arlington, VA	0.150	0.100		0.100		0.100		CONT.	CONT.	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			8.631	0.100		0.100		0.315		CONT.	CONT.	
Remarks: Contract EG&G Award/Oblig Sep 94												
Total Cost			77.951	25.435		38.884		13.975		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - ITEM NO. 124

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					Ship Contract Design/Live Fire T&E PE 0604567N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		78.624	142.848	184.545	93.339	75.458	55.408	58.220	Continuing	Continuing
Carrier Contract Design	42301	48.238	97.644	132.033	69.550	48.927	25.199	28.530	Continuing	Continuing
Ship Contract Design	S1803	30.386	44.213	52.512	21.748	9.232	5.934	5.443	Continuing	Continuing
Ship Specifications	S2197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Live Fire Test & Evaluation	S2198	0.000	0.000	0.000	2.041	2.922	0.000	0.000	Continuing	Continuing
LHA Replacement	S2465	0.000	0.000	0.000	0.000	14.377	24.275	24.247	TBD	TBD
Titanium WTD/Hatchcover	S9073	0.000	0.991	0.000	0.000	0.000	0.000	0.000	N/A	N/A
Quantity of RDT&E Articles		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: This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development (usually after Program Initiation) of engineering, programmatic and acquisition documentation including ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This line also supports the Congressionally mandated Live Fire Test and Evaluation program for new ship designs.</p> <p>Contract Design has traditionally been the engineering development of the technical and contractual definition of the ship design (including ship specifications and drawings) to a level of detail sufficient for respective shipbuilders to make a sound estimate of the construction cost and schedule. Additionally, the contract design package developed under this PE has provided the technical baseline from which the Navy selects the shipbuilder who then develops the detail design package required to support the construction and eventual delivery of the ship. This PE also supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions, and supports engineering planning and ship affordability studies.</p> <p>Under Acquisition Reform for new design ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering Integrated Product and Process Development (IPPD) process extending through and after contract award. This serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, system programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) will utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on commercial practices and incorporates a phased technical definition. This may involve continuing IPT efforts where Program Initiation has not occurred, and/or after Milestone B.</p>										

R-1 SHOPPING LIST - Item No. 125 -1 of 125 -16

Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5

Ship Contract Design/Live Fire T&E PE 0604567N

B. Program Change Summary:

	FY 2001	FY2002	FY2003
FY 2002 President's Budget:	77.488	89.388	
Appropriated Value:	78.204	131.388	
Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	0.420	11.460	
FY 2003 Pres Budget Submit:	78.624	142.848	184.545

Funding:

FY 2001 adjustment due to Misc.(+.420).

FY 2002 adjustment for VSR Island Design CVN 77 (+12.734) and Section 8123: Management Reform (-1.274).

FY 2003 adjustmen: None

Technical: Not Applicable.

R-1 SHOPPING LIST - Item No. 125 -2 of 125 -16

Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA 5	Ship Contract Design/LFT&E PE 0604567N				Carrier Contract Design 42301				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	48.238	97.644	132.033	69.550	48.927	25.199	28.530	Continuing	Continuing
RDT&E Articles Qty	0	0	0	0	0	0	0	N/A	N/A
<p>A. Mission Description and Budget Item Justification: This project encompasses CVN 77 and CVNX Contract Design and CVNX LFT&E efforts. The traditional distinct phasing of the design process for aircraft carriers has been replaced with a continuous concurrent engineering regime incorporating the methodology, measurement, and management elements of the Navy's Integrated Product and Process Development (IPPD) process, extending it beyond contract award. CVN 77 Warfare Systems Integration effort will be managed within a technology change management process at contract award to allow further system development. This will ensure that the latest technologies are properly incorporated during the 8 year construction period for an Aircraft Carrier, without costly contract changes. The IPPD process serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, aviation programs, and suppliers. Government/Industry Integrated Product Teams (IPTs) utilize the IPPD process within an Integrated Data Environment (IDE) to design and develop ship construction Contract Data Packages (CDPs). The Future Carrier design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.</p> <p>The CVN 77 research and development investment identifies and validates transition technologies for incorporation into the CVN 77 design. These technologies will enhance shipboard workload reductions, reduce life cycle costs for CVN 77, provide benefits to the other nine ships of the NIMITZ class, and mitigate future risk for CVN (X). The pivotal investment area is transition technology insertion into, and the functional combining of, traditional combat system, Command, Control, Computers and Communications, Intelligence, Surveillance and Reconnaissance (C4ISR), and aviation functions into a cohesive integrated system. This effort will be herein referred to as Warfare Systems Integration (WSI).</p> <p>CVNX Total Ship Integration, the integration of major systems into ship design, is a continuation of the effort commenced within PE0603512N, PU 42693. This investment in CVNX 1 design starts in FY 02 and continues through FY 05. This design integration effort includes redesign and rearrangement of ship components; redesign of hull, mechanical and electrical (HM&E) and auxiliary systems (air-conditioning and ventilation, power distribution, airborne noise management, reduction of steam, environmental safety and health (ESH) and interface control); redesign of water production and tankage; electric loads analysis; redesign of power distribution; analysis and redesign of structure; analysis, tracking and management of changes in weight distribution and stability; and analysis and redesign of survivability systems.</p> <p>The CVNX contract design effort encompasses those efforts required to develop the contract data package necessary to support CVNX 1 procurement. The CVNX LFT&E effort consists of vulnerability and susceptibility assessments of the new CVNX design and accomplishes congressionally mandated LFT&E.</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Cont Design/Live Fire T&E PE 0604567	PROJECT NAME AND NUMBER Carrier Contract Design 42301
FY 2001 ACCOMPLISHMENTS:		
<p>(U) (\$28.758) Warfare Systems Integration – Contract system baseline established. Continued system baseline design refinement. Conducted System Requirements Review (SRR) and System Functional Review (SFR). Continued monitoring improvements targeted at reducing the operational and support costs of the ship's Warfare Systems, specifically for data exchange across operational areas, data fusion, and integrated displays for operators. Continued cooperative radar developments with DD-21 program regarding integration of MFR and VSR and trade studies required to mitigate risk and neck-down to more achievable solutions. Commenced the information infrastructure detailed design development, including required new technology system and software developments that enable data exchange across operational areas, data fusion and integration. Continued refinement of Warfare Systems Integration design and integrate into the ship design. These efforts continued to support forward fit of the new CVN 77 warfare system to the future CVNX class of nuclear aircraft carriers.</p> <p>(U) (\$11.744) Propulsion and Electric Power Generation – Started development of shipboard equipment for consolidated throttle control and remote EPCP. Completed development and drawings for improved shielding. Completed development and testing of detectors and continued development of valve control system. Continued testing of the purification system and completed drawings and procedure changes.</p> <p>(U) (\$7.736) SmartProduct Model - Obtained design data to advance the development of the smart product model of the CVN/CVNX. Augmented the design development of the smart product model for additional areas of the ship to provide for cost effective insertion of new technologies through reduction of engineering effort required to incorporate changes and to support more productive automated manufacturing.</p>		
FY 2002 PLAN:		
<p>(U) (\$86.413) Future Carrier design – Commence resolution of future carrier design issues and update contract data package, including system descriptions, system diagrams, design drawings and specifications in areas where near-term LLTM advanced purchase and early fabrication work may be impacted. The update will accommodate changes to future carriers, future carrier systems, and future carrier equipment necessitated by equipment obsolescence, operational need, and the need to incorporate newer systems/technology to meet ORD requirements and reduce Total Ownerships Cost (TOC). Conduct Total Ship Integration through the IPPD process to incorporate the design changes required to the legacy baseline design for definition at the total system level. Complete conceptual baseline design (including a New Propulsion Plant, Electromagnetic Aircraft Launching System (EMALS), Zonal Electrical Distribution System, Electrical Auxiliaries, Reverse Omosis Distillate Units, Integrated Warfare Systems, and overall Total Ship Integration Efforts to close System Requirement Review Gaps, Conduct In-Process Design Review and continue development of engineering design package documentation.</p> <p>(U) (\$1.947) Propulsion and Electric Power Generation – Complete development of consolidated throttle control and remote EPCP. Complete testing of purification system. Complete development of valve control system.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/ BA 5	Ship Cont Design/Live Fire T&E PE 0604567	Carrier Contract Design 42301
<p>FY 2002 PLAN CONTINUED</p> <p>(U) (\$9.284) - CVNX LFT&E - Conduct, through completion, a vulnerability assessment of the CVNX design to address LFT&E concerns identified in the TEMP. Conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&E concerns, and conduct LFT&E surrogate test program. This includes testing of Damage Prevention Protection System, DAPS components, underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests.</p> <p>FY 2003 PLAN</p> <p>(U) (\$122.733) Future Carrier Design – Continue resolution of design issues and update of the contract data package, including design drawings and specifications in areas where near- term LLTM advanced purchase and early fabrication work may be impacted. The update will accommodate changes to the ship, its systems and equipment necessitated by equipment obsolescence, operational need, and incorporation of newer systems/technology. Continue Total Ship Integration through the IPPD process to incorporate the design changes required to the legacy baseline design for definition at the total system level. Continue Warfare System design refinement and conduct fourth of seven software build Critical Design Reviews (CDR). Continue monitoring improvements targeted at reducing the operational and support costs of the ship's Warfare Systems, specifically for data exchange across operational areas, data fusion, and integrated displays for operators. Continue development of system selection decision data packages, continue building the Warfare Systems Integration design contract data package (CDP) and integrate into the ship design. Continue development of requirements necessary to support WSI DT/OT in accordance with DOT&E guidance. Sustain efforts in accordance with the Navy's warfare system life cycle support strategy to insure compatibility and consistency between Navy warfare system development efforts conducted by designated PARMS, and concurrent efforts by the shipbuilder's electronic systems integrator.</p> <p>(U) (\$9.300) - CVNX LFT&E - Continue to conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&E concerns and continue to conduct LFT&E surrogate test program. This includes continuation of testing Damage Prevention Protection System, DAPS components, underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE:								
APPROPRIATION/BUDGET ACTIVITY							PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/ BA 5							Ship Cont Design/Live Fire T&E PE 0604567			Carrier Contract Design 42301					
B. Other Program Funding Summary							FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603512N/42208 Carrier Sys Development							117.791	123.359	81.095	84.265	87.404	60.654	44.291	Continuing	Continuing
PE 0603512N/42693 Carrier Sys Definition							13.854	33.435	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
BLI 200100 Carrier Replacement Program							4,143.600	136.000	308.835	243.703	397.916	417.377	2,645.398	Continuing	Continuing
<p>C. Acquisition Strategy: The Carrier acquisition strategy is that CVN 77 and follow-on hulls will be acquired/managed using a phased technology insertion or “evolutionary” strategy. Technologies include “multi-function” radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators, as well as other technologies which will reduce total ownership costs on CVN 77 and the previous nine ships of the NIMITZ class, while mitigating risk for CVNX. As with past NIMITZ class carriers, the CVN 77 Ship Detail Design and Construction Contract has been awarded as a sole source FPIF contract to Newport News Shipbuilding. However, the development and procurement of the new Integrated Warfare System was awarded to Newport News Shipbuilding as a CPAF contract.</p>															
Program Milestones		CVN 68 Class has been approved at Milestone III													
Engineering Milestones		CVN 68 Class has been approved at Milestone III													
T&E Milestones		CVN 68 Class has been approved at Milestone III													
Contract Milestones		CVN 68 Class has been approved at Milestone III													

R-1 SHOPPING LIST - Item No. 125 -6 of 125 -16

Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Cont Design/Live Fire T&E PE 0604567			Carrier Contract Design 42301						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total Award Cost	FY 01 Cost	FY 01 Award Date	FY 2002 Cost	FY 02 Award Date	FY 2003 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Live Fire Test & Evaluation	TBD	NSWC CD, MD				7.392	12/01	7.370	12/02	Cont.	Cont.	Cont.
	Contract	NNS				1.000	10/01	1.000	10/02	Cont.	Cont.	Cont.
	Various	Miscellaneous (under \$1M)				0.892		0.930				
Subtotal T&E			0.000	0.000		9.284		9.300		Cont.	Cont.	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			97.653	48.163		97.644		132.033		Cont.	Cont.	Cont.
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design/LFT&E PE 0604567N			PROJECT NAME AND NUMBER Ship Contract Design S1803					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		30.386	44.213	52.512	21.748	9.232	5.934	5.443	Continuing	Continuing
RDT&E Articles Qty		0	0	0	0	0	0	0	N/A	N/A

A. Mission Description and Budget Item Justification: This project supports development of all technical, programmatic and contractual documentation required for the acquisition of various ships in the Navy's Shipbuilding Program. The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the prospective shipbuilder to make a sound estimate of construction cost and schedule. It also serves as the technical definition from which the shipbuilder develops the shipbuilding detailed design and testing package required to build and test the ship. This funding also provides for Navy retention of unique ship design knowledge. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned Navy ship. This data base will serve as the basis to evaluate and qualify any future ship design. Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which will serve for the future acquisition of Navy Ship and supports the development of design methodologies/tools which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions.

FY 2001 Accomplishments:

- (U) (\$14.000) Continue Planning Yard CG Modernization Contract Design.
- (U) (\$ 7.000) Continue CG Government Team support for design products, including ship design data base and specifications.
- (U) (\$ 2.000) Continue CG Electronic System design.
- (U) (\$ 0.554) Continue Trimaran Design.
- (U) (\$ 6.832) Commence Littoral Support Fast Patrol Craft Design.

FY 2002 PLAN:

- (U) (\$8.011) Continue Planning Yard CG Modernization Contract Design.
- (U) (\$ 6.159) Continue CG Government Team support for design products, including ship design data base and specifications.
- (U) (\$ 1.650) Continue CG Electronic System design.
- (U) (\$ 6.493) Continue JCC(X) Ship Design Acquisition Documents for Decision Review
- (U) (\$5.300) Continue JCC(X) Early Industry Concept Study Efforts
- (U) (\$12.900) Commence JCC(X) Government Support for Design Products including Design Trade Studies, Performance Specifications and Statement of Work
- (U) (\$1.300) Commence JCC(X) Mission Package Evolutionary Requirements Definition
- (U) (\$2.400) Commence JCC(X) Definitizing Ship Functional Design

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							February 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA 5		Ship Contract Design/LFT&E PE 0604567N			Ship Contract Design S1803					
<p>FY 2003 PLAN:</p> <p>(U) (\$7.616) Continue Planning Yard CG Modernization Contract Design</p> <p>(U) (\$7.096) Continue CG Government Team support design products, including ship design data base and specifications</p> <p>(U) (\$2.876) Commence Manpower and Training studies</p> <p>(U) (\$22.000) Commence JCC(X) Functional Design</p> <p>(U) (\$5.324) Commence JCC(X) Mission Package Interface Design Definition</p> <p>(U) (\$5.200) Continue JCC(X) Government Team support for acquisition and design products including management of design data and specifications</p> <p>(U) (\$2.400) Continue JCC(X) Early Industry Design Studies</p>										
B. Other Program Funding Summary		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603563N Ship Concept Advanced Design		0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PE 0603564N Ship Preliminary Design & Feasibility Studies		\$19.993	\$9.868	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
<p>C. Acquisition Strategy:</p> <p>For CG Modernization: The Planning Yard and NAVSEA team will perform required studies. These studies will lead to the development of detail design/integration products for installation of CG work packages including Land Attack and AADC. The conversion packages will be completed coastwide.</p> <p>For JCC(X): The plan is for a FY 06 SCN ship award. This decision will be subject to a review of RDT&E resources based on the JROC validated ORD.</p>										
<p>D. Schedule:</p> <p>For CG Modernization: Awards for this funding are scheduled for FY 02 - FY 07 to support the CG Conversion Program of Record Installations in FY 06 (1), FY 07 (2), FY 08 (4), and FY 09 (4) .</p> <p>For JCC(X): Award is scheduled for FY 06.</p>										

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
CG Mod Class Drawings	SS/CPAF	Ingalls Shipbuilding, Pascago	Continuing	9.930	Continuing	8.011	Note 1	7.616	Note 1	Continuing	Continuing	Continuing
CG Mod Electronic Systems	C/CPAF	LMGES, Morristown, NJ	Continuing	6.050	Note 1	1.000	Note 1			Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	JJMA, Arlington VA	Continuing	0.676	Note 1	0.520	Note 1			Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	CSCAME, Arlington, VA	Continuing	0.600	Note 1	4.000	Note 1	5.500	Note 1	Continuing	Continuing	Continuing
Ship Integration	C/CPFF	Lockheed Martin	Continuing	0.000	N/A	0.000	N/A	1.150	Note 1	Continuing	Continuing	Continuing
Equipment Support	WR	NSWC, MD/PA/VA	Continuing	2.500	N/A	5.332	11/01	4.250	TBD	Continuing	Continuing	Continuing
Engineering Design	MISC	Shipyards /TBD	Continuing	0.000	MISC	14.747	TBD			0.000	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	Gibbs and Cox	Continuing	0.000	N/A	0.620	TBD			0.000	Continuing	Continuing
Ship Integration/Systems Engineering	MISC	MISC	Continuing	0.546	MISC							
JCC(X) Mission System Design	WR	SPAWAR, San Diego,CA	Continuing	0.000	N/A	3.891	TBD	5.507	TBD	Continuing	Continuing	Continuing
JCC(X) Ship Functional Design	TBD	TBD	0.000	0.000	N/A	0.000	N/A	16.412	TBD	Continuing	Continuing	Continuing
JCC(X) Mission Package Interface	TBD	TBD	0.000	0.000	N/A	0.000	N/A	3.000	TBD	Continuing	Continuing	Continuing
Littoral Craft Design	PD	ONR, Arlington,VA	Continuing	6.808	11/00	0.000	N/A			0.000	7.944	7.944
Subtotal Product Development				27.110		38.121		43.435		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract												
Engineering Support	Misc	Misc		1.873	Misc	0.000			Misc	Continuing	Continuing	Continuing
Software Development				0.000		0.000				0.000	0.000	0.000
CG Mod Training Development	WR	ATRC, Misc		0.365		1.269	Misc	2.988	Misc	0.000	0.000	1.269
Integrated Logistics Support				0.000		0.000				0.000	0.000	0.000
Configuration Management				0.000		0.000				0.000	0.000	0.000
Technical Data				0.000		0.000				0.000	0.000	0.000
GFE				0.000		0.000				0.000	0.000	0.000
Subtotal Support			Continuing	2.238		1.269		2.988		Continuing	Continuing	Continuing
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	CPFF	Logicon	0.000	0.000	N/A	0.000	N/A	1.020	Note 1	0.000	1.020	0.000
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A			0.000	0.000	0.000
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A			0.000	0.000	0.000
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A		N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		1.020		0.000	1.020	0.000
Remarks: Note 1 - Existing Contract												
Contractor Engineering Support		Misc	0.000	0.000		1.573	Misc	1.100	Misc	0.000	2.673	2.710
Government Engineering Support	Misc	Misc	Continuing	0.000	Misc	1.550	Misc	2.588	Misc	Continuing	Continuing	Continuing
Program Management Support	Misc	Misc	Continuing	0.998	Misc	1.500	Misc	1.281	Misc	Continuing	Continuing	Continuing
Travel	N/A	N/A	Continuing	0.040	Misc	0.200	Misc	0.100	Misc	Continuing	Continuing	Continuing
Labor (Research Personnel)			0.000	0.000		0.000				0.000	0.000	0.000
Overhead			0.000	0.000		0.000				0.000	0.000	0.000
Subtotal Management			Continuing	1.038		4.823		5.069		Continuing	Continuing	Continuing
Remarks:												
Total Cost			Continuing	30.386		44.213		52.512		Continuing	Continuing	Continuing
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design LFT&E 0604567N			PROJECT NAME AND NUMBER LHA Replacement S2465						
COST (\$ in Millions)			FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			0.000	0.000	0.000	0.000	14.377	24.275	24.247	TBD	TBD
RDT&E Articles Qty			0	0	0	0	0	0	0	N/A	

A. Mission Description and Budget Item Justification: The five ships of the LHA 1 Class are scheduled to reach the end of their 35 year service life starting in 2011. Replacement ships are required to support amphibious operations.

The LHA 1 class is a multi purpose amphibious assault ship delivered to the Navy in the 1970's. The design merged the flight deck of an LPH and a vehicle and well deck of an LPD. The design allowed the use of helicopters and landing craft to conduct amphibious assaults. As technology has evolved, new amphibious assault systems have been introduced into service (e.g. LCAC) which required the modification of the LHA design, resulting in the LHD 1 Class. New systems being developed require advances in ship capabilities. The MV-22, AAV and the JSF are currently in development and , in order to fully integrate these systems, a ship with greater flight deck capability and improved stability is required. Future programs such as the CH-53E and AH-1Z replacement aircraft will further stress current ship designs. To facilitate new USMC operational doctrine, such as OMFTS, STOM and Seabased logistics, the operational requirements will increase.

FY 2001 PLAN: N/A

FY 2002 PLAN: N/A

FY 2003 PLAN: NA

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EXHIBIT R-2a, RDT&E Project Justification						DATE:								
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER						
RDT&E, N/BA 5						Ship Contract Design/Live Fire T&E PE 0604567N		LHA Replacement 2465						
B. Other Program Funding Summary						FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total
PE 0603563N Ship Concept Advanced Design						0.000	3.469	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
PE 0603564N Ship Preliminary Design & Feasibility Studies						14.912	4.992	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT PE 0604567N				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E				LHA Contract Design S2465					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Systems Integration	TBD	TBD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
System Studies	TBD	TBD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	CSC AME Arlington,VA	0.000	0.000	Note 1	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	JJMA Arlington, VA	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	W/R	NSWC CD, Carderock, MD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Systems Engineering	W/R	NSWC DD, Dahlgren, VA	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Subtotal Product Development			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing
Note 1: Existing Contract												
Development Support Equipment	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Software Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Training Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Integrated Logistics Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Configuration Management	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Technical Data	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing
Subtotal Support			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT PE 0604567N				PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E				LHA Contract Design S2465 37073						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000		
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000		
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000		
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000		
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Design Management Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Government Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Program Management Support	TBD	TBD	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Travel	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Labor (Research Personnel)	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Overhead	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing	
Remarks: Note 1. Existing Contract													
Total Cost			0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing	
Remarks:													

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					Navy Tactical Computer Resources/0604574N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		29.828	39.696	2.185	2.948	2.996	3.099	3.151	CONT.	CONT.
Standard Hardware/21353		28.926	2.825	2.185	2.948	2.996	3.099	3.151	CONT.	CONT.
NWTDB/X2265		0.902	0.000	0.000	0.000	0.000	0.000	0.000	N/A	4.607
AN/UYQ-70 Sub Common Elec Equip Replacement/S9074		0.000	6.740	0.000	0.000	0.000	0.000	0.000	N/A	6.740
AN/UYQ-70 Tactical Computer Resources/S9075		0.000	20.814	0.000	0.000	0.000	0.000	0.000	N/A	20.814
Multi-Level Security for Network-Centric AN/UYQ-70/S9076		0.000	3.370	0.000	0.000	0.000	0.000	0.000	N/A	3.370
Complementary High Energy Laser/Missile/S9077		0.000	5.947	0.000	0.000	0.000	0.000	0.000	N/A	5.947
Quantity of RDT&E Articles										
<p>A. Mission Description and Budget Item Justification: The Standard Hardware project in combination with UYQ-70 Display Improvements will perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line. The Naval Warfare Tactical Data Base (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB is the data architecture component of Copernicus. NWTDB has developed management and engineering processes to define and translate information needs to automated systems, and to manage changes resulting from new operational requirements or technology advances.</p> <p>Project S9074 (Congressional add) provides AN/UYQ-70 Displays for submarine applications.</p> <p>Project S9075 (Congressional add) provides funding for continued AN/UYQ-70 Technology Insertion/Technology Refresh.</p> <p>Project S9076 (Congressional add) provides funding for Network-Centric AN/UYQ-70 applications.</p> <p>Project S9077 (Congressional add) provides funding for development of a small/inexpensive inertial measurement precision pointing control and instrumentation for a variety of ATP systems applications.</p>										

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: FEBRUARY 2002	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE Navy Tactical Computer Resources/0604574N	
B. Program Change Summary:	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
(U) FY 2002 President's Budget	30.608	3.836	
(U) Appropriated Value	30.891	41.036	
(U) Adjustments to FY2001/2002 Appropriated Value/FY 2002 President's Budget	-1.063	-1.340	
)U) FY 2003 Pres Budget Submit	29.828	39.696	2.185
Funding: FY-01 funding decrease due to Section 8086 - 7% Pro-Rata (-0.216), Gov-Wide Rescission (-0.067), FY-01 SBIR (-0.690), and 01 Actuals (-0.090). FY-02 funding decrease due to Realignment of Elems Tier (-0.986) and Section 8123: Management Reform Initiative (-0.354).			
Schedule: N/A			
Technical: N/A			

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 15)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Standard Hardware/21353						
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	28.926	2.825	2.185	2.948	2.996	3.099	3.151	CONT.	CONT.
RDT&E Articles Qty									
<p>A. Mission Description and Budget Item Justification: Perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line.</p> <p>(U) Program Accomplishment and Plans:</p> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$0.736) Performed intensive study and testing of COTS/OSA technology that adheres to standards. - (U) (\$0.653) Met Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future. - (U) (\$19.141) AN/UYQ-70 Technology Refreshment - (U) (\$0.669) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. - (U) (\$7.727) Submarine Combat System Q-70 Retrofits <p>FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$1.000) Perform intensive study and testing of COTS/OSA technology that adheres to standards. - (U) (\$0.725) Adapt these technologies and products to the Navy's tactical display/processor needs in the future. - (U) (\$1.100) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future. <p>FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$0.768) Perform intensive study and testing of COTS/OSA technology that adheres to standards. - (U) (\$0.550) Adapt these technologies and products to the Navy's tactical display/processor needs in the future. - (U) (\$0.867) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future. 									

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification

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(Exhibit R-2a, page 3 of 15)

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-5	Navy Tactical Computer Resources/0604574N	Standard Hardware/21353
<p>B. Other Program Funding Summary: N/A</p> <p>- (U) Related RDT&E</p> <ul style="list-style-type: none">PE 0603270N (ELECTRONIC WARFARE ADVANCED TECHNOLOGY)PE 0603382N (ADV COMBAT SYSTEM TECHNOLOGY)PE 0603502N (SHALLOW WATER MCM)PE 0603755N (COOPERATIVE ENGAGEMENT)PE 0604307N (AEGIS WEAPON SYSTEM MODS)PE 0604366N (STANDARD MISSILE IMPROVEMENTS)PE 0604372N (NEW THREAT UPGRADE)PE 0604755N (SHIP SELF DEFENSE) <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p>		

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 15)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Standard Hardware/21353						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 01 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	189.900	5.600		0.000		0.000		0.000	195.500	179.600
Ancillary Hardware Development			0.350	0.300							0.650	
Systems Engineering	Various	Various	45.341	16.240		1.925		1.592		CONT.	CONT.	CONT.
Licenses			0.500	0.500							1.000	
Tooling			0.500	0.500							1.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			236.591	23.140		1.925		1.592		CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment											0.000	
Software Development	Various	Various	36.873	2.236		0.000		0.000		0.000	39.109	32.373
Training Development			1.000	0.375							1.375	
Integrated Logistics Support			1.597	0.575							2.172	
Configuration Management			0.500	0.200							0.700	
Technical Data			0.738	0.400							1.138	
GFE											0.000	
Subtotal Support			40.708	3.786		0.000		0.000		0.000	44.494	
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 15)

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Standard Hardware/21353						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	Various	Various	23.085	1.200		0.250		0.200		CONT.	CONT.	CONT.
Operational Test & Evaluation	Various	Various	16.238	0.400		0.250		0.193		CONT.	CONT.	CONT.
Tooling											0.000	
GFE											0.000	
Subtotal T&E			39.323	1.600		0.500		0.393		CONT.	CONT.	CONT>
Remarks:												
Contractor Engineering Support	Various	Various	12.827	0.300		0.300		0.100		CONT.	CONT.	CONT.
Government Engineering Support	Various	Various	25.000	0.000		0.000		0.000		0.000	25.000	N/A
Program Management Support											0.000	
Travel			1.622	0.100		0.100		0.100		CONT.	CONT.	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			39.449	0.400		0.400		0.200		CONT.	CONT.	CONT.
Remarks:												
Total Cost			356.071	28.926		2.825		2.185		CONT.	CONT.	CONT.
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 15)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY			PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			Naval Warfare Tactical Data Base/X2265							
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.902	0.000	0.000	0.000	0.000	0.000	0.000	N/A	4.607
RDT&E Articles Qty										
<p>SPONSOR FUNDING DECISION REDUCES PROGRAM TO ZERO FY02 AND OUT TO FUND HIGHER PRIORITY PROGRAMS</p> <p>A. Mission Description and Budget Item Justification: The Naval Warfare Tactical Database (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB has developed management and engineering processes to define and translate information needs to automated systems and to manage changes resulting from new operational requirements or technology advances. Database integration, data standardization, and configuration management are supported by reverse engineering database structures and definitions into a common format to facilitate data interoperability problem identification and resolution. The management and engineering processes and authoritative database structures are documented in the NWTDB Standards Manual which is distributed to Navy C4ISR and combat system architects, system developers, reference database producers, other services and agencies, and selected foreign governments. The Data Analysis and Reconciliation Tool (DART) is a Microsoft Windows-based application that was developed using an evolutionary process to support the full information management life cycle, i.e., linking databases and transfer formats to operational information requirements. DART supports systems documentation, configuration management, DoD standard data element generation, and requirements traceability. In August 1996, DASN C4I recommended the NWTDB process and DART tool to ASD C3I as a practical approach to solve data interoperability problems and support database integration, especially for the Global Command and Control System. NWTDB management process received OSD award in 1993. Management responsibilities are defined in OPNAVINST 9410.6 of 13 Jul 93, "NWTDB Requirements for Tactical Naval Warfare Systems," which implements DoD Directive 4630.5 of 12 Nov 92, "Compatibility, Interoperability and integration of Tactical Command, Control, Communication and Intelligence (C3I) Systems," and DoD Directive 8320.1 of 26 Sep 91, "DoD Data Administration." OPNAVINST 9410.6 also specifies that Navy system developers and database producers will transition to NWTDB data standards and structures by the year 2000.</p>										

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification

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(Exhibit R-2a, page 7 of 15)

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	PROJECT NAME AND NUMBER Naval Warfare Tactical Data Base/X2265

(U) Program Accomplishment and Plans:

FY 2001 ACCOMPLISHMENTS:

- (U) (\$0.120) Enhanced DART to support user requirements.
- (U) (\$0.120) Incorporated emerging commercial standards, technologies and trends for inclusion in the NWTDB standard.
- (U) (\$0.292) Continued participation with FIWC/DRWG/others as required to prioritize data fill/data standardization issues. Prioritized issues with recommendations to program office.
- (U) (\$0.071) Participated with CRWG to identify and resolve selected data fill/data format issues. Prioritized issues with recommendations to program office.
- (U) (\$0.160) Updated and improved capability of NWTDB Web environment. Created comprehensive Web site with applicable Naval/DoD publications, instructions, links and guidance to system developers on information engineering.
- (U) (\$0.139) Acted as liaison to DISA data standardization efforts to promote Navy standards. Continued research on data standardization in order to submit data models/data elements as candidate DoD standards.

FY 2002 PLANS:

No funding beginning in FY02.

FY 2003 PLANS:

No funding beginning in FY02.

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 8 of 15)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	FEBRUARY 2002
B. Other Program Funding Summary: N/A (U) Related RDT&E: N/A C. Acquisition Strategy: N/A D. Schedule Profile: N/A		

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 9 of 15)

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Exhibit R-3 Cost Analysis (page 1)							DATE: FEBRUARY 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Naval Warfare Tactical Data Base/X2265						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	BPA	ORCI, Hanahan, SC	1.517	0.501	02/01					N/A	2.018	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.517	0.501		0.000		0.000		N/A	2.018	CONT.
Remarks:												
Development Support Equipment												
Software Development	BPA	ORCI, Hanahan, SC	1.599	0.320	02/01					N/A	1.919	N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			1.599	0.320		0.000		0.000		N/A	1.919	CONT.
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 15)

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Exhibit R-3 Cost Analysis (page 2)								DATE: FEBRUARY 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Naval Warfare Tactical Data Base (NWTBD) X2265						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000		N/A	0.000	N/A
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	BPA	BAH, San Diego, CA	0.137	0.000	N/A					N/A	0.137	0.137
Program Management Support	FFP	PRC, San Diego, CA	0.360	0.081	02/02					N/A	0.441	0.441
Travel	N/A	SPAWAR, San Diego, CA	0.092	0.000	10/02					N/A	0.092	0.092
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.589	0.081		0.000		0.000		N/A	0.670	0.670
Remarks:												
Total Cost			3.705	0.902		0.000		0.000		N/A	4.607	4.607
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 15)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROJECT NAME AND NUMBER Complementary High Energy Laser/Missile for SSD/S9077						
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	5.947	0.000	0.000	0.000	0.000	0.000	N/A	5.947
RDT&E Articles Qty									

A. Mission Description and Budget Item Justification: Development of a small and inexpensive inertial measurement system (SIMS) that will provide precision pointing control and instrumentation for a variety of ATP system applications with primary emphasis on laser weapons. Research to develop a sufficient understanding of the mechanism for the reduction of the radar system so that credible estimates can be made of the requisite laser power/time on target. It is also critical to conduct appropriate systems engineering analysis to assess the implication of the complementary weapon concept to the defensive missile system capability and combat system effectiveness of the combined systems.

(U) Program Accomplishments and Plans:

FY 2001 ACCOMPLISHMENTS

No funding provided

FY 2002 PLANS

-(U) (\$2.000) Develop small/inexpensive SIMS.

-(U) (\$3.947) Research laser plus missiles for Ship Self Defense.

FY 2003 PLANS

No funding provided

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 12 of 15)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	PROJECT NAME AND NUMBER Complementary High Energy Laser/Missile for SSD/S9077
<p>B. Other Program Funding Summary: N/A (U) Related RDT&E: N/A</p> <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p>		

R-1 SHOPPING LIST - Item No. 126

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 13 of 15)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: FEBRUARY 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT Navy Tactical Computer Resources/0604574N			PROJECT NAME AND NUMBER Complementary High Energy Laser/Missile for SSD/S9077						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		0.000		0.000		N/A	0.000	N/A
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		N/A	0.000	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 14 of 15)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N				Complementary High Energy Laser/Missile for SSD/S9077					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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						5.947					5.947	
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		5.947		0.000		N/A	5.947	N/A
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.000		0.000		N/A	0.000	N/A
Remarks:												
Total Cost						5.947		0.000		N/A	5.947	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 126

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 15 of 15)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5					R-1 ITEM NOMENCLATURE Mine Development/0604601N					
COST (\$ in Millions)	FY2000 & Prior Year	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	169.116	1.582	0.000	1.491	1.592	6.652	16.255	16.526	0.000	213.214
Mine Improvement Q0267	169.116	1.582	0.000	1.491	1.592	6.652	16.255	16.526	0.000	213.214
Quantity of RDT&E Articles	N/A	2 EDMs	N/A	N/A	N/A	N/A	N/A	N/A		
<p>A. Mission Description and Budget Item Justification (U) This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas: (1a) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations; (1b) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms; (1c) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields; (2a) Components/Subsystems, which develops upgrades of mine components to maintain effectiveness against current threat targets using proven state-of-the-art technology including a remote controlled mine capability (RECO); (2b) Advanced Power sources, which develops improved batteries without hazardous heavy metals, and (3) New mines, which designs and develops new mines, including replacements for Submarine Launched Mobile Mine (SLMM) MK 67 and Mine MK 56.</p>										

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5

R-1 ITEM NOMENCLATURE

Mine Development/0604601N

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

Product Development

- (U) (\$0.129) Primary Hardware - Completed design and development of one-way RECO and pressure sensor hardware; fabricate EDM pressure sensor .
Development Support Equipment

- (U) (\$1.183) Software Development - Completed software development for RECO, MK 221, Fast Patrol Boat, and Air cushion vehicle algorithms. Designed software development station. Completed upgrade/redesign of minefield planning TDA. Updated Operations data for MK 221 algorithms.

Test and Evaluation

- (U) (\$0.120) Development Test and Evaluation - Completed test program for RECO. Tested prototype pressure sensors.
Support

- (U) (\$0.130) Program Management Support

- (U) (\$0.020) Integrated Logistic Support - Completed ILS tasks for RECO.

2. FY 2002 Not Applicable

3. (U) FY 2003 PLANS

Product Development

- (U) (\$1.266) Software Development - Develop target detection algorithms for diesel-electric mini-sub and MCM ships. Continue development of PC-based, MEDAL-compliant TDA for minefield planning.
Support

- (U) (\$0.175) Program Management Support.

- (U) (\$0.050) Integrated Logistic Support.

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5					Mine Development/0604601N					
B. Program Change Summary:										
		FY 2001	FY 2002	FY 2003						
	FY 2002 President's Budget:	1.582	0.000	0.000						
	Appropriated Value:	1.968	0.000							
	Adjustment to FY2001/2002 Appropriated Value/FY 2002									
	President's Budget Submit:	(0.386)		1.491						
	FY 2003 President's Budget Submit:	1.582	0.000	1.491						
Funding: FY01 change due to (-0.014) 7% Pro Rata, (-0.315) SIAP BTR, (-0.009) SBIR, (-0.044) other adjustments, (-0.004) Gov't.-Wide Rescission FY03 change due to (+.500) Minefield Planning TDA, (+1.000) TDD Algorithm Development, (-0.009) Nonpay Inflation.										
Schedule: Not applicable										
Technical: Not applicable										
C. Other Program Funding Summary : (\$ in Millions)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To Complete	Total Cost
QS Mod 3		1.932	3.866	2.025	3.404	3.166	3.224	3.288	0.000	20.905
WPN BLI 323100										
D. Acquisition Strategy:										
NSWC CSS Panama City FL is teamed with other Navy laboratories and hardware contractors to design and develop the RECO.										

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5

R-1 ITEM NOMENCLATURE

Mine Development/0604601N

E. Schedule Profile

RECO PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	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
Events																																
RECO Design/Development																																
RECO Engineering Testing																																
TDA Design/Development																																
TDA Verification/Validation																																
Algorithm Design/Development																																
Algorithm Verification/Validation																																

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			MINE DEVELOPMENT/0604601N			MINE DEVELOPMENT/Q0267						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	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
Primary Hardware Development	RCP	NSWC, CSS-Panama City F	106.493	0.129	11/00			0.000		0.000	106.622	
Ancillary Hardware Development			2.158								2.158	
Systems Engineering	WR	NSWC, CSS-Panama City F	1.057					0.000		0.000	1.057	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees			4.790							0.000	4.790	
Subtotal Product Development			114.498	0.129		0.000		0.000		0.000	114.627	
Remarks:												
Development Support Equipment												
Software Development	WR	various	2.654	1.183	12/00			1.266			5.103	N/A
Training Development											0.000	
Integrated Logistics Support	WR	NSWC, CSS-Panama City, F	0.200	0.020	12/00			0.050			0.270	N/A
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			2.854	1.203		0.000		1.316		0.000	5.373	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 127

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			MINE DEVELOPMENT/0604601N			MINE DEVELOPMENT/Q0267						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	FY 2000 and Prior	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	WR	NSWC, CSS-Panama City, F	15.713	0.120	12/00					0.000	15.833	N/A
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			15.713	0.120		0.000		0.000		0.000	15.833	N/A
Remarks:												
Contractor Engineering Support												
Government Engineering Support			35.599								35.599	
Program Management Support	Var.	Various	0.452	0.130	12/00			0.175			0.757	N/A
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			36.051	0.130		0.000		0.175			36.356	N/A
Remarks:												
Total Cost			169.116	1.582		0.000		1.491		0.000	172.189	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604603N Air to Surface Munitions					
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			6.254	17.038	12.142	12.137				Continuing	Continuing
A2183 SLAM ER			6.254	12.776	12.142	12.137				Continuing	Continuing
A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE				4.262							4.262
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) A2183/STANDOFF LAND ATTACK MISSILE - EXPANDED RESPONSE (SLAM ER) Description: This program funds the development of SLAM (ER) designed to improve performance in the areas of launch and control aircraft survivability, immunity to countermeasures, probability of kill against hardened targets and improved user interfaces for both missile planning and launch aircraft integration. The SLAM ER system consists of hardware and software upgrades to the missile, software upgrades to the F/A-18 aircraft, and software upgrades to the Joint Mission Planning System (JMPS). In complying with DOD mandated requirements, Selective Availability Anti-spoofing Module (SAASM) is being incorporated into the SLAM ER weapon system.</p> <p>(U) A9078/LIGHT DEFENDER PRECISION STRIKE MISSILE Description: This program has been initiated to integrate and adapt the existing Light Defender missile for the MH-60 aircraft for Anti-Surface Warfare mission applications. Initial IOC is anticipated in FY 2007. The funds will be used to pay for integration of a booster on to the missile.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items.</p>											

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604603N Air to Surface Munitions				A2183 SLAM ER					
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			6.254	12.776	12.142	12.137				Continuing	Continuing
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: A2183/STANDOFF LAND ATTACK MISSILE - EXPANDED RESPONSE (SLAM ER) Description: This program funds the development of SLAM ER designed to improve performance in the areas of launch and control aircraft survivability, immunity to countermeasures, probability of kill against hardened targets and improved user interfaces for both missile planning and launch aircraft integration. The SLAM ER consists of both hardware and software upgrades to the missile. SLAM ER incorporates many non-development items i.e., the Embedded Global Positioning System/Inertial Navigation System (GPS/INS) (EGI), modified Tomahawk wings and warhead, and the existing advanced mode of the AWW-13 data link pod. The Automatic Target Acquisition (ATA) tracker is being integrated into the SLAM ER missile to enhance its capability to attack and kill in low thermal contrast, small targets in cluttered urban scenes, and in poor weather. The ATA capability will also reduce the overall number of Standoff Outside Area Defense (SOAD) missiles needed by increasing the probability of kill for part of the target set. In addition, ATA increases pilot and aircraft survivability by minimizing the time that the pilot needs to fly with his head down to control the weapon. SLAM ER incorporates ATA. To accommodate future U.S. Air Force and Navy aircraft integration, SLAM ER incorporates a MIL-STD-1760 interface. The SLAM ER Mission Planning Module (MPM) development and modifications are required to remain compatible with the changes to the Tactical Aircraft Mission Planning System (TAMPS) and to migrate to the Joint Mission Planning System. SLAM ER aircraft software integration efforts need to remain compatible with ongoing F/A-18 periodic software builds. To comply with DOD mandated requirements, Selective Availability Anit-Spoofing Module (SAASM) will be incorporated into the SLAM ER weapon system.</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (\$ 1.646) Continued SLAM/SLAM ER TAMPS MPM, and F/A-18 MPM into planning components of the JMPS. (U) (\$ 4.608) Continued Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy including ATA. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> (U) (\$ 1.800) Continue conversion of SLAM/SLAM ER TAMPS MPM, and F/A-18 MPM into planning components of the JMPS. (U) (\$ 2.844) Continue Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy. (U) (\$ 7.685) Begin SLAM-ER/SAASM Integration and introduction of full man-in-the-loop (MITL) capability in support of FA-18 17C/19C software. (U) (\$.060) Continue systems engineering, government and contractor support. (U) (\$.387) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> (U) (\$ 1.800) Continue conversion of SLAM/SLAM ER TAMPS MPM, and F/A-18 MPM into planning components of the JMPS. (U) (\$ 2.275) Continue Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy; F/A-18 software (17c, 19c). (U) (\$ 8.000) Continue SLAM-ER/SAASM Integration. (U) (\$.067) Continue systems engineering, government and contractor support. 											

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EXHIBIT R-2a, RDT&E Project Justification			DATE:																																									
			February 2002																																									
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																										
RDT&E, N / BA-5	0604603N Air to Surface Munitions	A2183 SLAM ER																																										
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">FY2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2002</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2003</th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: center;">2.553</td> <td style="text-align: center;">12.890</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">3.701</td> <td style="text-align: center;">-0.114</td> <td></td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: center;">6.254</td> <td style="text-align: center;">12.776</td> <td style="text-align: center;">12.142</td> <td></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 net increase of \$3.701 million reflects an increase of \$3.711 million for continuation of SLAM ER ATA software efforts offset by a \$0.001 million reduction for a Small Business Innovative Research (SBIR) assessment and a \$.009 decrease of \$9k for reprioritization of requirements within the Navy. FY02 decrease of \$.114 million is for an undistributed congressional reduction.</p> <p>(U) Schedule: FY 2001: ATA IOC changed from 3Q/01 to 2Q/02, and ATA FOT&E changed from 1Q-4Q/01 to 1Q/01-1Q/02 due to the resolution of F/A-18 software integration issues and additional DOT&E requirements.</p> <p style="padding-left: 40px;">FY 2002 reflects a change in SAASM PDR from 2Q/02 to 3Q/02 and CDR from 4Q/02 to 3Q/03 due to resolution of technical issues. JMPS UPC contract option award delayed from 1Q/02 to 2Q/02 to conduct independent assessment.</p> <p>(U) Technical: N/A</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2002</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2003</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2004</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2005</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2006</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2007</th> <th style="text-align: center; border-bottom: 1px solid black;">To Complete</th> <th style="text-align: center; border-bottom: 1px solid black;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>WPN BLI 223100 SLAM ER</td> <td style="text-align: center;">23.753</td> <td style="text-align: center;">25.954</td> <td style="text-align: center;">83.781</td> <td style="text-align: center;">55.930</td> <td style="text-align: center;">63.240</td> <td></td> <td></td> <td style="text-align: center;">Continue</td> <td style="text-align: center;">Continue</td> </tr> </tbody> </table> <p>Related RDT&E,N: Not Applicable</p>						FY2001	FY2002	FY2003		(U) FY 2002 President's Budget:	2.553	12.890			(U) Adjustments from the President's Budget:	3.701	-0.114			(U) FY 2003 President's Budget Submit:	6.254	12.776	12.142		Line Item No. & Name	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	WPN BLI 223100 SLAM ER	23.753	25.954	83.781	55.930	63.240			Continue	Continue
	FY2001	FY2002	FY2003																																									
(U) FY 2002 President's Budget:	2.553	12.890																																										
(U) Adjustments from the President's Budget:	3.701	-0.114																																										
(U) FY 2003 President's Budget Submit:	6.254	12.776	12.142																																									
Line Item No. & Name	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																																			
WPN BLI 223100 SLAM ER	23.753	25.954	83.781	55.930	63.240			Continue	Continue																																			

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA-5		0604603N Air to Surface Munitions		A2183 SLAM ER
(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones	3Q/01 JMPS UPC Contract Award	2Q/02 ATA IOC 2Q/02 SCRB (F/A-18 19C) 1Q/01-1Q/02 FOT&E/ATA	2Q/03 IOC (FA-18, 17C)	2Q/05 IOC (FA-18, 19C)
(U) Engineering Milestones	4Q/01 JMPS UPC Design Review	3Q/02 SAASM PDR	3Q/03 SAASM CDR	
(U) T&E Milestones	1Q/01 DT/ATA	4Q/02 V&V (F/A-18 17C)	4Q/03 DT JMPS UPC	
(U) Contract Milestones	2Q/01 ATA FRP II	2Q/02 ATA FRP III 2Q/02 SAASM Contract Award 2Q/02 JMPS UPC Contract Option	2Q/03 ATA FRP IV 2Q/03 JMPS UPC CONTRACT OPTION	

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604603N Air to Surface Munitions			A2183 SLAM ER						
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
Software Development	SS/CPIF	Boeing, Mo	117.154	1.269	04/01	1.800	11/01	1.800	11/02	2.375	124.398	124.398
Miscellaneous	Various	Various	46.226	0.377	Various	0.402	Various	0.400	Various	Continuing	Continuing	
SAASM Integration/Fit SW Upgrade	SS/CPIF	Boeing, Mo				7.186	01/02	6.600	01/03	4.300	18.086	18.086
Subtotal Product Development			163.380	1.646		9.388		8.800		Continuing	Continuing	
Remarks:												
Miscellaneous	C/FFP	Delex Corporation	1.101			0.060	8/02	0.067	08/03	0.198	1.426	1.426
SBIR Assessment						0.387					0.387	
Subtotal Support			1.101			0.447		0.067		0.198	1.813	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604603N Air to Surface Munitions				PROJECT NUMBER AND NAME A2183 SLAM ER					
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
Missile Flight Test & Evaluation	WX	NAWC-WD	23.965	4.608	Various	2.541	Various	2.275	Various	4.264	37.653	37.653
Subtotal T&E			23.965	4.608		2.541		2.275		4.264	37.653	
Remarks:												
Gov't Engineering Support (SAASM)	WX	TBD				0.400	Various	1.000	Various	1.000	2.400	2.400
Subtotal Management						0.400		1.000		1.000	2.400	
Remarks:												
Total Cost			188.446	6.254		12.776		12.142		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604603N Air to Surface Munitions					A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE					
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				4.262							4.262
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: A9078/LIGHT DEFENDER PRECISION STRIKE MISSILE Description: This program has been initiated to integrate and adapt the existing Light Defender missile for the MH-60 aircraft for Anti-Surface Warfare mission applications. Initial IOC is anticipated in FY 2007. The funds will be used to pay for integrating the initial risk reduction efforts to the missile.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: N/A</p> <p>2. FY 2002 PLANS:</p> <p style="padding-left: 40px;">- (U) (\$4.262) Integrate booster system onto Light Defender Weapon.</p>											

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE																																																									
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">FY2001</th> <th style="width: 10%; text-align: center;">FY2002</th> <th style="width: 10%; text-align: center;">FY2003</th> <th colspan="3"></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td></td> <td></td> <td></td> <td colspan="3"></td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td></td> <td style="text-align: center;">4.262</td> <td></td> <td colspan="3"></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td></td> <td style="text-align: center;">4.262</td> <td></td> <td colspan="3"></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: FY 2002 increase of \$4.262 consists of funding to conduct risk reduction for the Light Defender Precision Strike Missile weapon system.</p> <p>(U) Schedule: "Not Applicable."</p> <p>(U) Technical: "Not Applicable."</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"><u>Line Item No. & Name</u></th> <th style="width: 7.5%;">FY 2001</th> <th style="width: 7.5%;">FY 2002</th> <th style="width: 7.5%;">FY 2003</th> <th style="width: 7.5%;">FY 2004</th> <th style="width: 7.5%;">FY 2005</th> <th style="width: 7.5%;">FY 2006</th> <th style="width: 7.5%;">FY 2007</th> <th style="width: 7.5%;">To Complete</th> </tr> </thead> <tbody> <tr> <td>Not Applicable</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Related RDT&E,N: Not Applicable</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									FY2001	FY2002	FY2003				(U) FY 2002 President's Budget:							(U) Adjustments from the President's Budget:		4.262					(U) FY 2003 President's Budget Submit:		4.262					<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Not Applicable									Related RDT&E,N: Not Applicable								
	FY2001	FY2002	FY2003																																																											
(U) FY 2002 President's Budget:																																																														
(U) Adjustments from the President's Budget:		4.262																																																												
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<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete																																																						
Not Applicable																																																														
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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE		
<p>(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.</p> <p>(U) E. SCHEDULE PROFILE: N/A</p>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
(U) Program Milestones		N/A		
(U) Engineering Milestones		N/A		
(U) T&E Milestones		N/A		
(U) Contract Milestones		Contract award 60 days after funding available.		

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE						
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
Primary Hardware Development												
Ancillary Hardware Development	FFP	Israeli Military Industries/TBD				0.750					0.750	0.750
Systems Engineering	FFP	Israeli Military Industries/TBD				2.000					2.000	2.000
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						2.750					2.750	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												

R-1 SHOPPING LIST - Item No. 128

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A9078 LIGHT DEFENDER PRECISION STRIKE MISSILE						
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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support	WX	Various				0.100	Various				0.100	
Government Engineering Support	WX	Various				1.212	Various				1.212	
Program Management Support	WX	Various				0.182	Various				0.182	
Travel	WX	Various				0.018	Various				0.018	
Labor (Research Personnel)												
Overhead												
Subtotal Management						1.512					1.512	
Remarks:												
Total Cost						4.262					4.262	
Remarks:												

R-1 SHOPPING LIST - Item No. 128

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 11 of 11)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	9.041	10.219	7.769	3.630	1.566	1.561	1.602	CONT.	CONT.
Lightweight Hybrid Torpedo / V2234 / F2234 ¹	9.041	10.219	7.769	3.630	1.566	1.561	1.602	CONT.	CONT.
Quantity of RDT&E Articles									
<p>A. (U) Mission Description and Budget Item Justification: The funding is to design, integrate and test the Lightweight Hybrid Torpedo (MK54 MOD 0). The torpedo will be comprised of hardware and software from the MK 46 Torpedo, MK50 Torpedo, and MK 48 ADCAP Torpedo. The Lightweight Hybrid Torpedo will provide performance improvements in shallow water, littoral, counter-measure filled environments. The Engineering Development Model (EDM) contract was awarded to Raytheon Systems Company (formerly Hughes Aircraft Company) in June 1996. Current contract has delivered twenty-one EDM units to support the in-water test program.</p> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$0.603) Continued development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT. - (U) (\$1.596) Continued development of tactical and signal processing software. - (U) (\$4.229) Continued simulation and in-water developmental test program. - (U) (\$2.238) Continued Lightweight torpedo system engineering efforts. - (U) (\$0.375) Supported the LHT Command and Decision system software integration into DDG-51 class surface combatants. 									

R-1 SHOPPING LIST - Item No. 129

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N

FY 2002 PLAN:

- (U) (\$0.827) Continue development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT.
- (U) (\$1.541) Continue development of tactical and signal processing software.
- (U) (\$4.834) Continue simulation and conduct in-water developmental technical evaluation test program.
- (U) (\$2.297) Continue Lightweight torpedo system engineering efforts.
- (U) (\$0.720) Support the LHT Command and Decision system software integration into DDG-51 class surface combatants.

FY 2003 PLAN:

- (U) (\$0.505) Continue development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT.
- (U) (\$1.039) Continue development of tactical and signal processing software.
- (U) (\$3.920) Continue simulation and conduct operational in-water test program.
- (U) (\$1.447) Continue Lightweight torpedo system engineering efforts.
- (U) (\$0.858) Support the LHT Command and Decision system software integration into DDG-51 class surface combatants.

R-1 SHOPPING LIST - ITEM No. 129

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5				LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N						
B. (U) Program Change Summary			FY 2001	FY 2002	FY 2003					
(U) FY 2002 President's Budget:			9.262	10.310						
(U) Appropriated Value:			9.347	10.310						
(U) Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:			-0.306	-0.091						
(U) FY 2003 President's Budget Submit:			9.041	10.219	7.769					
Funding:										
FY01: Net reduction of (-0.221M) is due to a (-0.013M) SBIR reduction and (-0.208M) for minor adjustments.										
FY02: Net reduction of (-0.091M) for minor adjustments.										
Schedule: In-water engineering testing scheduled for fourth quarter FY01 was extended three months to second quarter FY02 due to problems in scheduling Fleet services. TECHEVAL will commence second quarter FY02 following completion of engineering testing.										
Technical: Not Applicable.										
C. Other Program Funding Summary (\$ in millions)										
			FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
Torpedo MK 46 MODS (WPN / PE 0204228N / BA3 / BLI 321500)										
			7.041	9.861	38.783	35.534	55.778	113.775	117.797	CONT.
AN/SQQ-89(V) Surface ASW Combat Systems (OPN / PE 0204228N / BA2 / BLI 213600)										
			10.449	14.204	22.140	28.801	18.089	9.632	11.803	CONT.
AN/SQQ-89(V) Surface ASW Combat Systems (OPN / PE 0204228N / BA2 / BLI 213605)										
			3.640	2.210	2.107	2.429	3.162	11.679	12.143	CONT.
D. (U) Acquisition Strategy: The EDM contract is currently held by Raytheon Systems Company (formerly Hughes Aircraft Company). The contract was awarded as a Cost-Plus-Award Fee in June 1996 and was converted to Cost-Plus-Incentive Fee in December 1998.										

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

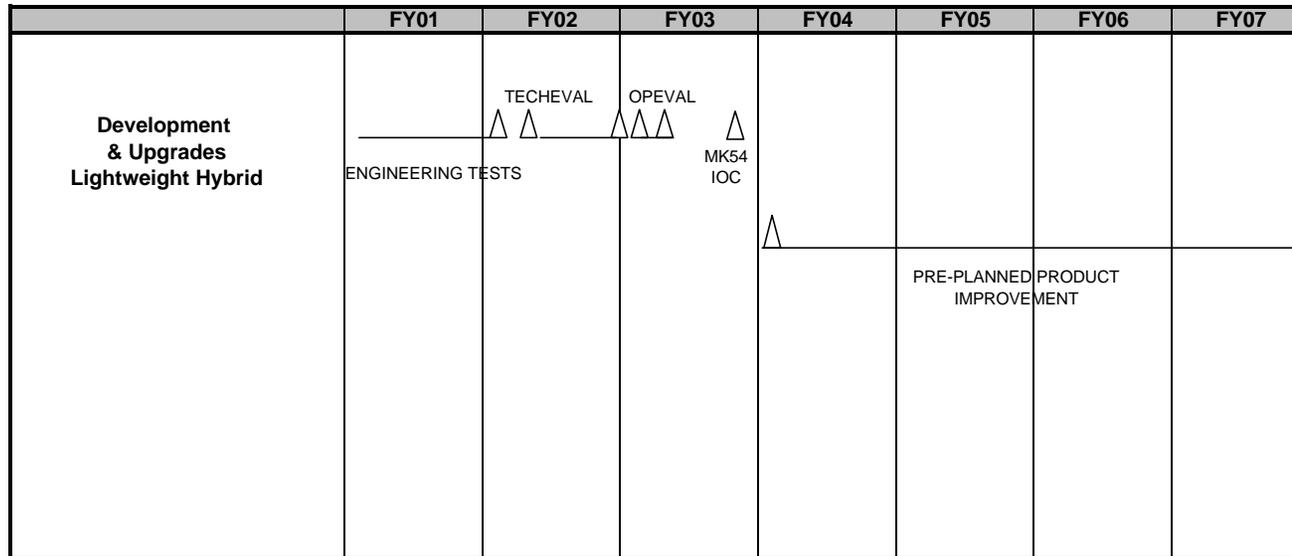
APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

R-1 ITEM NOMENCLATURE

LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N

E. Schedule Profile:



R-1 SHOPPING LIST - Item No. 129

Exhibit R-2, RDT&E Budget Item Justification

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			0604610N			Lightweight Hybrid Torpedo / V2234/F2234						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Ancillary Hardware Development	WR	NUWC Newport/Keyport	CONT.	0.574	10/00	0.827	10/01	0.505	10/02	CONT.	CONT.	N/A
Ancillary Hardware Development	WR	NAWC Patuxent River	CONT.	0.029	03/01					CONT.	CONT.	N/A
Systems Engineering	WR	NUWC Newport/Keyport	CONT.	1.517	10/00	1.701	10/01	1.194	10/02	CONT.	CONT.	N/A
Systems Engineering	WR	NSWC Indian Head	CONT.	0.080	01/01	0.000		0.000		CONT.	CONT.	N/A
Systems Engineering	Various	Various	CONT.	0.375	10/00	0.720	10/01	0.858	10/02	CONT.	CONT.	N/A
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			CONT.	2.575		3.248		2.557		0.000	8.380	N/A
Development Support Equipment											0.000	
Software Development	WR	NUWC Newport	CONT.	1.596	10/00	1.541	10/01	1.039	10/02	CONT.	CONT.	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			CONT.	1.596		1.541		1.039		0.000	4.176	
Remarks:												

R-1 SHOPPING LIST - Item No. 129

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			0604610N			Lightweight Hybrid Torpedo / V2234/F2234						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
System Test & Evaluation	WR	COMOPTEVFOR	CONT.	0.068	10/00	0.100	10/01	0.319	10/02	CONT.	CONT.	N/A
	WR	NUWC Newport/Keyport	CONT.	3.854	10/00	4.734	10/01	3.601	10/02	CONT.	CONT.	N/A
	WR	NAWC Patuxent River	CONT.	0.000		0.000		0.000		CONT.	CONT.	N/A
	C.CPFF	ARL/PSU State College, PA	CONT.	0.428	01/01	0.000		0.000		0.000	CONT.	N/A
Subtotal T&E			CONT.	4.350		4.834		3.920		CONT.	CONT.	
Remarks: None.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	CONT.	0.500	MISC.	0.515	MISC.	0.183	MISC.	CONT.	CONT.	
Travel			CONT.	0.020	MISC.	0.030	MISC.	0.030	MISC.	CONT.	CONT.	
Labor (Research Personnel)											0.000	
Overhead			CONT.	0.000	MISC.	0.051	MISC.	0.040	MISC.	CONT.	CONT.	
Subtotal Management			CONT.	0.520		0.596		0.253		CONT.	CONT.	
Remarks: None.												
Total Cost			CONT.	9.041		10.219		7.769		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 129

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604618N; Joint Direct Attack Munition (JDAM)					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	142.595*		28.066**	55.767***	48.861	35.964	33.804	7.150	0.000	0.000	352.207
A2137/Joint Direct Attack Munition (JDAM)	142.595		28.066	55.767	48.861	35.964	33.804	7.150	0.000	0.000	352.207
Quantity of RDT&E Articles	114		95	35	10	35	25				314
<p>* Note: Prior year funds were executed under Project Unit E2137</p> <p>**The FY 2001 budget reflects a \$3.000M Congressional add for DAMASK Component Packaging executed under A2893, which has been reduced by \$.027 million for Congressional reductions.</p> <p>***The FY 2002 budget reflects \$12.200M PIP Congressional Special Interest Item. Of this amount, \$4.000M is directed for DAMASK.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: JDAM is a joint acquisition program combining Department of Navy and Air Force requirements to upgrade existing General Purpose Bomb capabilities in adverse weather and at medium to high altitude releases. The upgrade is accomplished by the addition of a guidance tail kit to existing General Purpose Bombs (2000 lb and 1000 lb inventory bombs). The Air Force is the executive service. The Navy's participation in JDAM involves joint development of JDAM components and support of Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18. JDAM will provide an accurate (defined as not more than 13 meters) adverse weather capability. The program will incorporate commonality with the Joint Standoff Weapon where feasible. The Product Improvement Program (PIP) will integrate precision capabilities with the JDAM weapon system and the F/A-18 ATFLIR for preplanned and reactive strike missions.</p> <p>The JDAM Joint Operational Requirements Document (JORD) has recently been updated to include a requirement for a JDAM capability with the 500lb inventory bomb (MK82). The Air Force will continue to be the executive service for this effort. The Navy is participating in the joint development of the JDAM MK82 and support the Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18, utilizing a smarttrack for additional weapon carriage.</p> <p>114 Guided Test Vehicles (GTVs) were procured in FY96 during the Engineering and Management Development (E&MD) baseline contract. In FY 01, 60 GTVs were procured for MK83 testing, and 35 GTVs were procured for MK82 testing. The 35 GTVs, to be procured in FY 02, will also be for MK-82 testing.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING and MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 130

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604618N; Joint Direct Attack Munition (JDAM)					A2137 / Joint Direct Attack Munition (JDAM)					
COST (\$ in Millions)	Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program	
Project Cost	142.595	28.066	55.767	48.861	35.964	33.804	7.150	0.000	0.000	352.207	
RDT&E Articles Qty	114	95	35	10	35	25				314	

* Note: Prior year funds were executed under Project Unit E2137.

**The FY 2001 budget reflects a \$3.000M Congressional add for DAMASK Component Packaging executed under A2893, which has been reduced by \$.027 million for Congressional reductions.

***The FY 2002 budget reflects \$12.200M PIP Congressional Special Interest Item. Of this amount, \$4.000M is directed for DAMASK.

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: JDAM is a joint acquisition program combining Department of Navy and Air Force requirements to upgrade existing General Purpose Bomb capabilities in adverse weather and at medium to high altitude releases. The upgrade is accomplished by the addition of a guidance tail kit to existing General Purpose Bombs (2000 lb and 1000lb inventory bombs). The Air Force is the executive service. The Navy's participation in JDAM involves joint development of JDAM components and support of Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18. JDAM will provide an accurate (defined as not more than 13 meters) adverse weather capability. The Product Improvement Program (PIP) will integrate precision capabilities with the JDAM weapon system and the F/A-18 ATFLIR for preplanned and reactive strike missions.

The JDAM Joint Operational Requirements Document (JORD) has recently been updated to include a requirement for a JDAM capability with the 500lb inventory bomb (MK82). The Air Force will continue to be the executive service for this effort. The Navy is participating in the joint development of the JDAM MK82 and support the Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18, utilizing a smartrack for additional weapon carriage.

114 Guided Test Vehicles (GTVs) were procured in FY96 during the Engineering and Management Development (E&MD) baseline contract. In FY 01, 60 additional GTVs were procured for MK83 testing, and 35 GTVs were procured for MK82 testing. The 35 GTVs, to be procured in FY 02, will also be for MK-82 testing.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

- (U) (\$ 0.695) Continued JDAM baseline MPM support for the transition to JMPS, as well as MPM support for the JDAM MK82 .
- (U) (\$ 7.594) Performed aircraft integration and Operational Flight Program (OFP) software development for the JDAM MK82 and smartrack (BRU-55).
- (U) (\$ 8.305) Performed systems engineering, ILS and program support for the MK82 effort, and preparation for the JDAM PIP MS-I decision.
- (U) (\$ 3.967) Performed engineering analysis, design and integration for the JDAM PIP seeker development, \$3M of which is for the DAMASK Repackaging Effort.
- (U) (\$ 3.789) Completed Developmental Testing (DT) of the MK83 JDAM and procured additional test assets for the MK83 Operational Test (OT).
- (U) (\$ 0.452) Initiated Air Worthiness testing of the MK82 JDAM.
- (U) (\$ 3.264) Procured test assets for the MK82 effort.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	February 2002
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS (Continued):</p> <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$ 3.339) Continue JDAM baseline MPM support for the transition to JMPS, as well as MPM support for the JDAM MK82 and PIP effort.- (U) (\$ 26.473) Perform aircraft integration, and OFP software development for the JDAM MK82, and PIP ATFLIR effort.- (U) (\$ 11.652) Perform systems engineering, ILS and program support for the MK83 MS-III decision, the MK82 effort, and the PIP effort \$4M of which is for DAMASK .- (U) (\$ 8.948) Complete Air Worthiness testing and initiate DT of the MK82 JDAM.- (U) (\$ 3.666) Continue to procure test assets for the MK82 effort.- (U) (\$ 1.689) Portion of extramural program reserved for Small Business Innovative Research (SBIR) assessment in accordance with 15 USC 638. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none">- (U) (\$ 4.108) Continue JDAM baseline MPM support for the transition to JMPS, as well as MPM support for the JDAM MK82 and PIP effort.- (U) (\$ 26.610) Continue to perform aircraft integration, and OFP software development for the JDAM MK82 and BRU-55 smartrack, and PIP ATFLIR effort.- (U) (\$ 11.057) Continue to perform systems engineering, ILS and program support for the MK82 effort, and the PIP program.- (U) (\$ 6.056) Complete MK82 DT and perform OPEVAL testing of the MK82 JDAM and BRU-55 smartrack.- (U) (\$ 1.030) Procure test assets for the PIP effort.		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)			PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)			
(U) B. PROGRAM CHANGE SUMMARY:								
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget:	28.845	56.274						
(U) Adjustments from the President's Budget:	-0.779	-0.507						
(U) FY 2003 President's Budget Submit:	28.066	55.767	48.861					
CHANGE SUMMARY EXPLANATION:								
(U) Funding: The net FY 2001 decrease of \$ 0.779 million was due to a decrease of \$ 0.691 million for a Small Business Innovative Research (SBIR) assessment, and a decrease of \$0.088 million for reprioritization of requirements within the Navy. The FY 2002 decrease of \$ 0.507 million was due to an undistributed Congressional reduction.								
(U) Schedule: The OT report for MK84/BLU-109 was released Dec 00. As a result, the MK84/BLU-109 MS-III and FRP were completed in 2Q/01 versus 1Q/01. Due to the expanded MK83 testing, technical and acquisition milestones have been rescheduled; MK83 DT rescheduled from 2Q/01 to 4Q/01, MK83 FOT&E/OT rescheduled from 4Q/01 to 3Q/02, MK83 LRIP rescheduled from 1Q/01 to 1Q/02, and MK83 FRP and MS III rescheduled from 2Q/02 to 2Q/03. The PIP AoA completion was delayed from 1Q/01 to 2Q/01, as a result, PIP MS II is planned for 2Q/02.								
(U) Technical: Not Applicable.								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
PAN,MC/B.A.-1 Ammunition - JDAM	69.166	40.763	225.992	177.148	148.973	186.193	175.654	0
DERF - JDAM		162.500						
NAVY Cost of War Adjustment			54.000	106.000	122.000	122.000	113.000	
RDT&E Air Force JDAM - PE 0604618F	10.654	27.679	16.594*	34.816*				
* AF FY2003 & FY2004 includes the Non-Recurring for SASSM and GPS Anti-Jam development.								

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)																														
<p>(U) D. ACQUISITION STRATEGY: The Joint Direct Attack Munition (JDAM) program acquisition strategy is derived from the 1994 Federal Acquisition Streamlining Act (FASA). The focus of the program is to reduce acquisition management costs by buying bomb modification kits as if they were commercial items, including obtaining waivers to regulations that affect the efficiency of the contracting process. The JDAM contracting officer has authority to approve individual deviations from any Federal Acquisition Regulation (FAR) and Defense Acquisition Regulation Supplement (DFARS) provision not required by Statute of Executive Order for the JDAM EMD contract. The contract management philosophy includes partnering with the contractor, long term relationships with vendors, negotiations based on prices instead of costs, credit for past performance, and allowing the contractor to determine how to produce the product with the government providing only what the product must do. Cost is an independent variable. JDAM kits have a lifetime (20 year) warranty, significantly reducing Operating and Support costs.</p> <p>(U) E. SCHEDULE PROFILE: *</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 20%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>2Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109</td> <td></td> <td>2Q/03 MK83 MS-III</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>3Q/01 MK82 PDR</td> <td>1Q/02 MK82 CDR</td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td>4Q/01 MK83 DT</td> <td>2Q/02 MK82 DT 3Q/02 MK83 OT</td> <td>1Q/03 MK82 OTRR 3Q/03 MK82 OT</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td>2Q/01 MK84/BLU-109 FRP</td> <td>1Q/02 MK83 LRIP</td> <td>2Q/03 MK83 FRP</td> <td></td> </tr> <tr> <td>(U) Product Improvement</td> <td>2Q/01 PIP AoA complete</td> <td>2Q/02 PIP MSII</td> <td></td> <td>2Q/05 PIP DT 2Q/06 PIP OT</td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	2Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109		2Q/03 MK83 MS-III		(U) Engineering Milestones	3Q/01 MK82 PDR	1Q/02 MK82 CDR			(U) T&E Milestones	4Q/01 MK83 DT	2Q/02 MK82 DT 3Q/02 MK83 OT	1Q/03 MK82 OTRR 3Q/03 MK82 OT		(U) Contract Milestones	2Q/01 MK84/BLU-109 FRP	1Q/02 MK83 LRIP	2Q/03 MK83 FRP		(U) Product Improvement	2Q/01 PIP AoA complete	2Q/02 PIP MSII		2Q/05 PIP DT 2Q/06 PIP OT
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																												
(U) Program Milestones	2Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109		2Q/03 MK83 MS-III																													
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(U) Product Improvement	2Q/01 PIP AoA complete	2Q/02 PIP MSII		2Q/05 PIP DT 2Q/06 PIP OT																												

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604618N; Joint Direct Attack Munition (JDAM)				A2137 / Joint Direct Attack Munition (JDAM)					
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
OFP Development	WX	AWL/CL	18.261	1.897	11/00	8.225	11/01	10.081	11/02	2.527	40.991	
Mission Planning Development	C/CPAF	Raytheon, Tucson, AZ	6.012	0.615	11/00	3.167	01/02	3.078	11/02	4.664	17.536	17.536
Aircraft Integration	SS/CPAF	Boeing	7.578	4.974	01/01	17.548	01/02	16.247	11/02	32.974	79.321	79.321
MK82 Development	C/CPAF	Boeing, St. Louis, MO	4.290	5.267	12/00	0.573	02/02	1.764	01/03	0.000	11.894	11.894
In-House Support	WX	NAWC, CL	45.797	6.557	10/00	7.817	10/01	8.451	10/02	15.186	83.808	
Misc (efforts under \$1M-Aggregate)	Various	Various	4.729	0.262	11/00	0.500	11/01			0.000	5.491	
Award Fees	C/CPAF/M	Boeing	0.969								0.969	0.969
Subtotal Product Development			87.636	19.572		37.830		39.621		55.351	240.010	
Remarks: Prior year funds were under Proj Unit E2137.												
Travel	P.D	JDAM	1.313	0.190	10/00	0.190	10/01	0.190	10/02	0.400	2.283	
Engineering Services	Various	Various	11.267	1.133	10/00	1.655	11/01	1.793	10/02	4.081	19.929	
Subtotal Support			12.580	1.323		1.845		1.983		4.481	22.212	
Remarks: Prior year funds were under Proj Unit E2137.												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604618N; Joint Direct Attack Munition (JDAM)			A2137 / Joint Direct Attack Munition (JDAM)						
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	NAWC/CL	16.144	1.122	10/00	8.646	10/01	2.876	10/02	6.746	35.534	
Operational Test & Evaluation	PD	OPTEVFOR	3.121	0.020	10/00	1.781	01/02	3.008	01/03	0.919	8.849	
Test Assets	MIPR	Boeing, St Louis, MO	13.592	5.253	10/00	3.604	01/02	1.030		8.340	31.819	31.819
Misc. (efforts under \$1M-Aggregate)	Various	Various	3.850	0.624	11/00	0.062	11/01				4.536	
Subtotal T&E			36.707	7.019		14.093		6.914		16.005	80.738	
Remarks: Prior year funds were under Proj Unit E2137.												
Misc. (efforts under \$1M-Aggregate)	Various	Various	5.672	0.152	11/00	0.310	02/02	0.343	03/03	1.081	7.558	
SBIR assessment						1.689						
Subtotal Management			5.672	0.152		1.999		0.343		1.081	9.247	
Remarks: Prior year funds were under Proj Unit E2137.												
Total Cost			142.595	28.066		55.767		48.861		76.918	352.207	
Remarks:												

R-1 SHOPPING LIST - Item No. 130

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: January 2002																													
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Joint Service Explosive Ordnance Disposal (EOD) Development Engineering/0604654N																																
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																												
Total PE Cost	6.606	8.051	7.781	10.246	9.517	9.668	7.840	Cont.	Cont.																												
EOD Procedures/Q1829	6.606	8.051	7.781	10.246	9.517	9.668	7.840	Cont.	Cont.																												
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A																														
<p>A. Mission Description and Budget Item Justification: This is a Joint Service Program. CNO approved NAPDD 502-852 provides the program definition and scope of effort.</p> <p>DOD Directive 5160.62 assigned to the Secretary of the Navy (SECNAV) the responsibility of Single Manager for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). It also assigns to the Executive Manager for EODT&T (N85X) the responsibility to provide for technical development, validation, preparation, Joint Service approval, and distribution of all EOD procedures texts, graphic aids, manuals, and bulletins. This program also provides for the implementation of the DOD/DOE/FBI Memorandum of Understanding (MOU) as delineated in DOD Directive 3150.5 for response to Improvised Nuclear Devices (INDs).</p> <p>This program provides for the development of validated EOD render-safe procedures (RSPs), key identification features, and safety information used by EOD personnel in all four military services when performing their mission of rendering safe and disposing of both domestic and foreign explosive ordnance and improvised explosive devices (IEDs) that pose a threat to military operations, installations, personnel, and materials. In addition, EOD render-safe procedures for foreign ordnance must be developed as soon as possible after gaining knowledge of its existence. This effort requires exploitation and analysis of the foreign ordnance prior to development of the procedures. The program also provides for a DOD Technical Response Group with specialized tools and procedures, which may deploy with the primary EOD response element in response to IND and Weapons of Mass Destruction (WMD) incidents. This effort also provides resources necessary for the foreign threat mine acquisition/exploitation (FTMA/E) program. This effort includes acquisition, inert certification, intelligence and operational exploitation, analysis, procedure development, and disposition of the highest priority foreign threat naval mines.</p> <table border="0" style="width: 100%; margin-top: 20px;"> <tr> <td></td> <td style="text-align: center;">FY 2001</td> <td style="text-align: center;">FY 2002</td> <td style="text-align: center;">FY 2003</td> </tr> <tr> <td>FY 2002 President's Budget:</td> <td style="text-align: center;">7.037</td> <td style="text-align: center;">8.123</td> <td style="text-align: center;">7.850</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">7.102</td> <td style="text-align: center;">8.123</td> <td></td> </tr> <tr> <td>Adjustments to FY 2001/2002</td> <td style="text-align: center;">-0.496</td> <td style="text-align: center;">-0.072</td> <td style="text-align: center;">-0.069</td> </tr> <tr> <td>Appropriated Value/FY2002</td> <td></td> <td></td> <td></td> </tr> <tr> <td>President's Budget:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2003 Pres Budget Submit:</td> <td style="text-align: center;">6.606</td> <td style="text-align: center;">8.051</td> <td style="text-align: center;">7.781</td> </tr> </table> <p>Funding: FY01 - (-0.186M) SBIR, (-0.245M) Actuals, (-0.065M) Minor adjustments. FY02 - (-0.072) Management Reform Initiative, FY03 - (-0.024M) BSO realignment residual issues, (-0.45M) Inflation.</p> <p>Schedule: Not applicable. Technical: Not applicable.</p>											FY 2001	FY 2002	FY 2003	FY 2002 President's Budget:	7.037	8.123	7.850	Appropriated Value:	7.102	8.123		Adjustments to FY 2001/2002	-0.496	-0.072	-0.069	Appropriated Value/FY2002				President's Budget:				FY 2003 Pres Budget Submit:	6.606	8.051	7.781
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R-1 SHOPPING LIST - Item No. 131 - 1 of 131- 4

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: January 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE Joint Service Explosive Ordnance Disposal (EOD) Development Engineering/0604654N	
<p>B. Other Program Funding Summary: Not applicable.</p> <p>C. Acquisition Strategy: This is a non-acquisition program.</p> <p>D. Schedule Profile: Not applicable.</p> <p>1. (U) FY 2001 ACCOMPLISHMENTS: (\$4.822) Obtained, analyzed and exploited foreign ordnance and developed EOD render-safe procedures for new sophisticated domestic and foreign ordnance. (\$.868) Developed Improvised Nuclear Device (IND) countermeasures procedures and participated in exercises and joint working groups. (\$.916) Obtained high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.</p> <p>2. (U) FY 2002 PLAN: (\$6.223) Continue to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance. (\$.882) Continue to develop IND countermeasures procedures and participate in exercises and joint working groups. (\$.946) Continue to obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.</p> <p>3. (U) FY 2003 PLAN: (\$5.858) Continue to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance. (\$.913) Continue to develop IND countermeasures procedures and participate in exercises and joint working groups. (\$1.010) Continue to obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.</p>		

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Exhibit R-3 Cost Analysis (page 1)										DATE: January 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			JT SVS EOD Development/0604654N			Explosive Ordnance Disposal Procedures/Q1829						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
RSP Development	WR	EODTD, IH, MD	130.882	4.298	10/00	5.162	10/01	4.885	10/02	Continuing	Continuing	N/A
IND Countermeasures	WR	EODTD, IH, MD	23.591	0.744	10/00	0.725	10/01	0.725	10/02	Continuing	Continuing	N/A
Foreign Mine Acquisition	WR	EODTD, IH, MD	1.923	0.788	10/00	0.782	10/01	0.843	10/02	Continuing	Continuing	N/A
Program Management Personnel	WR	EODTD, IH, MD	1.330	0.165	10/00	0.175	10/01	0.175	10/02	Continuing	Continuing	N/A
Miscellaneous	Various		2.895	0.611	10/00	1.207	10/01	1.153	10/02	Continuing	Continuing	N/A
											0.000	
											0.000	
Subtotal Product Development			160.621	6.606		8.051		7.781		0.000	Continuing	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: January 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			JT SVS EOD Development/0604654N			Explosive Ordnance Disposal Procedures/Q1829						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			160.621	6.606		8.051		7.781		0.000	Continuing	N/A
Remarks:												

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N PROJECT NUMBER: L1822
PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
L1822 Manpower, Personnel, Training, Simulation, and Human Factors	1,234	1,289	1,331	1,376	1,421	1,450	1,478	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This non-acquisition category program provides funds for continued (but less risky) R&D for broader application of advanced technologies to transition successful 6.3 research proof-of-concept demonstrations into operational use. Development of prototype systems to support and/or improve operational requirements of manpower and personnel sponsors is the primary goal of this Engineering Development Program. The 6.5 R&D Program features the use of a broad range of technologies from cognitive science and ability testing techniques, mathematical modeling and optimization, statistical and econometric forecasting, intelligent systems, data visualization, data mining, simulation, decision support systems, and new database and communications configuration.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E operational systems development because it encompasses engineering and development of new end-items prior to production approval decision.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$127K) Completed development of Navy Training Quota Management System (NTQMS). Developed and applied Student Value Model enhancement to NTQMS to more effectively transition the system into operational use.
- (U) (\$300K) Completed development of the Quality of Life Contributions to Navy Readiness Outcomes model. The project was expanded to include more sites and the database and decision support system were expanded and updated. Training materials were developed and tested. A final report will be completed in forth-quarter, FY 2001. The decision support system will transition to full production by the end of FY 2001.
- (U) (\$270K) Continued development of the Retention Monitoring System (RMS). Developed and incorporated data mining and intelligent agent techniques into RMS to identify specific emerging personnel retention problems. Completed design of the user interface. Began to implement and evaluate RMS prototype.
- (U) (\$192K) Continued development of the ARGUS Sailor Surveillance System. ARGUS is a prototype transition survey and monitoring system that provides personnel planners and managers detailed data on the reasons Navy personnel are staying in or leaving the Naval Service with indicators for policy changes that might induce them to stay on active duty. The system provides comprehensive historical and current separation information to identify specific personnel categories where attrition and retention problems

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N PROJECT NUMBER: L1822
PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

are emerging. Continued to collect questionnaires on separation data and load information into the database. Analyzed and evaluated the web-based query prototype system using live data.

- (U) (\$345K) Began transition of Distribution 2000 (D2K) project to operational use by demonstrating that technologies/models developed under 6.3 R&D proof-of-concept will work across a range of officer and enlisted detailing communities.

2. (U) FY 2002 PLAN:

- (U) (\$278K) Complete development of the Retention Monitoring System (RMS). Plan to evaluate and implement the system in a web-based application and to transition to full operation by end of FY 2002.
- (U) (\$203K) Complete development of the ARGUS Sailor Surveillance System and prepare the system for full implementation. Analyze and evaluate the attrition and retention measurement and monitoring system based on updated test results using current live data and to prepare the system for web based implementation.
- (U) (\$ 99K) Complete refinements to Assignment Policy Management System (APMS) prototype model to insure smooth transition of the prototype model to an operational decision support tool. Recent operational testing of APMS prototype model by Enlisted detailers revealed that the model needs improvements in terms of: (a) PCS costing functionality; and, (b) correction of software bugs identified during testing to effectively transition APMS to SPAWAR Information Technology Center (ITC).
- (U) (\$340K) Continue development of the Distribution 2000 (D2K) prototype system. Design interactive web pages to access and update user's input to the D2K model. Develop D2K interface with the Job Advertisement and Selection System (JASS). Begin design of the Distribution Monitoring System and the Decision Support System. Complete D2K system documentation requirements. Begin testing of D2K software.
- (U) (\$181K) Begin transition to operational use the results from 6.3 R&D project entitled STEAR - Skill Assessment, Training, Evaluation, and Assistance for Recruiters. Project will assess skill requirements of recruiters and available training to improve overall effectiveness of field recruiter force. Determine how the use of technology can enhance recruiter productivity and the recruiter's quality of life.
- (U) (\$188K) Begin transition of the models developed under the successful 6.3 Strength Planning and Budget System Integration project that addresses problems in managing enlisted strength planning, as well as budget development and execution, as an integrated system for both long and short term.

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N PROJECT NUMBER: L1822
PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

3. (U) FY 2003 PLAN:

- (U) (\$280K) Complete testing and development of D2K database, the web application, D2K model refinements, and the prototype Decision Support System. A report will be written that documents complete test results of the system for the distribution community and senior managers/executives.
- (U) (\$224K) Continue transitioning results from 6.3 R&D project entitled STEAR - Skill Assessment, Training, Evaluation, and Assistance for Recruiters. Project will assess skill requirements of recruiters and available training to improve overall effectiveness of field recruiter force. Determine how the use of technology can enhance recruiter productivity and the recruiter's quality of life.
- (U) (\$199K) Continue transitioning efforts of the models developed under the successful 6.3 Strength Planning and Budget System Integration project. This project addresses problems in managing enlisted strength planning, as well as budget development and execution, as an integrated system for both long and short term.
- (U) (\$149K) Begin development of URL Officer Career Path Simulation prototype model by leveraging the SWO Career Path Simulation Prototype model, which serves as a proof of concept. This effort will result in a URL career path simulation tool that will provide a definitive view of the billet structure in the URL communities so planning and guidance for healthy community management purposes can be attained.
- (U) (\$205K) Begin transition of Comprehensive Officer Force Management Environment models/system (CHROME) to operational use by developing a prototype that supports N13 Military Compensation decision-making.
- (U) (\$174K) Begin transition of Enlisted Manpower and Personnel Integrated Planning System (EMPIPS) to operational use by developing a prototype that supports N13 Officer and Enlisted Strength Planners.
- (U) (\$100K) Begin transition of Training Continuum and Readiness Modeling (TCARM) system to operational use by developing a prototype that supports N13, NPC-4, and CNET training quota control and personnel management of assignment/reassignment actions involving en-route training.

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N
PROGRAM ELEMENT TITLE: Manpower, Personnel,
Training, Simulation, and
Human Factors

PROJECT NUMBER: L1822
PROJECT TITLE: Manpower, Personnel,
Training, Simulation, and
Human Factors

B. (U) PROGRAM CHANGE SUMMARY:	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) FY 2002 President's Budget:	1,259	1,300	
(U) Appropriated Value:	1,259	1,300	
(U) Adjustments from Pres. Budget:	-25	-11	
(U) FY 2003 President's Budget:	1,234	1,289	1,331

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: Issue 64223 FY01 BTRs -25K
Issue 67825 FY02 Sec 8123 -11K
(U) Schedule: Not applicable.
(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) PE 0601152N, In-House Independent Lab Research
(U) PE 0601153N, Defense Research Sciences
(U) PE 0602233N, Mission Support Technology
(U) PE 0602722A, Personnel and Training
(U) PE 0603707N, Manpower, Personnel and Training Advanced Technology Development
(U) PE 0603731A, Manpower and Personnel
(U) PE 0603704F, Manpower and Personnel Systems Technology

(U) SCHEDULE PROFILE: Not applicable.

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N
PROGRAM ELEMENT TITLE: Navy Energy Program

A. (U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0371 Energy Conservation	5,015	3,129	5,691	5,804	5,956	6,055	6,164	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Develop energy-efficient systems and practices for ships, aircraft, and facilities. Resulting energy efficiency gains contribute to fleet sustainability, combat capability (e.g., greater range, time on station), and reduced operating costs. Efforts include fuel use optimization aids for aircraft; existing gas turbine engine efficiency improvements, anti-fouling paints, and auxiliary systems for ships; and adaptation of renewable/alternative energy technologies to Navy facility needs. Provide engineering development, and test and evaluation support to the companion PE 0603724N Project R0829. This program and the companion PE 0603724N Navy Energy Program (ADV), support the achievement of Legislated, White House, Department of Defense (DoD), and Navy Energy Management Goals. They also address direction by the Office of the Secretary of Defense, the Secretary of the Navy, and the Chief of Naval Operations to make up-front investment in technologies that reduce future cost of operation and ownership of the fleet and supporting infrastructure. Navy is TRISERVICE lead for the implementation of renewable/alternative energy systems across DoD.

R-1 Line Item 133

UNCLASSIFIED

Budget Item Justification
(Exhibit R-2, page 1 of 6)

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,000) Aircraft: Completed conversion of Flight Optimization Routines for Energy Management (FOREM) software to WINDOWS format and developed "WINGS" database format. FOREM software in the WINGS database format is compatible with the Pre-flight Planning System (PFPS) and the Joint Mission Planning System (JMPS) software. Extended FOREM to additional aircraft (e.g. P-3C and AV-8B) and responded to fleet requested enhancements of operational software.
- (U) (\$1,451) Ships: Completed powering trial of DDG-51 retrofit stern flap, achieving fuel savings of about 8% of annual fuel consumption. SHIPALTS for retrofit of stern flaps to DDG-51, DD-963, CG-47, and FFG-7 were approved. NAVSEA is retrofitting all existing surface combatants at the rate of 25-30 ships per year. Monitored ship trials of ablative copper/cobiocide antifouling hull coatings; broadened task to include large-scale tests of copper/-cobiocide self-polishing paints; deleted from further testing those easy release and ablative copper coatings which have performed poorly. Conducted SHIPEVAL of new bleed air manifold to reduce air leakage from turbo-generators; and land-based test of online water wash system for LM2500. Designed system for variable speed drive of 1000 gpm fire pumps.
- (U) (\$2,564) Alternative and Renewable Energy Systems: Provided site specific design and support of PV/Diesel hybrid power systems for off-grid applications, including improvement of power control software algorithms. Provided design and installation support for two grid-connected systems using advanced thin-film PV modules. Designed, procured components and started integration of prototype PV/flywheel hybrid power system to investigate advanced energy storage systems. Continued development of high efficiency, low emissions, power generation system. As assigned DoD technical lead, provided all services with site-specific technology selection, and system engineering support to implement zero emission renewable/alternative power systems.

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Budget Item Justification
(Exhibit R-2, page 2 of 6)

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

2. (U) FY 2002 PLAN:

- (U) (\$500) Aircraft: Distribute FOREM for WINDOWS (updated to WINGS database format) to fleet when development is completed for all legacy aircraft. Extend FOREM to additional aircraft, and respond to fleet requested enhancements. Replace DOS system palm-tops in use by Marines when deployed, with WINDOWS compatible palm-tops. Provide PFPS/JMPS programs with WINGS data support as requested.
- (U) (\$629) Ships: Apply two best self-polishing reduced copper/cobiocide hull coatings to alternate bow and stern quarters of test ship for full scale trials. Provide accumulated life cycle management knowledge of ablative copper hull coatings to support the NAVSEA demo of 12-year hull coatings system. Conduct full-scale shipboard evaluation of gas turbine on-line water-wash system for LM2500; anti-degradation compressor blade coating and improved ceramic turbine blade track for DDA501-K17/34 turbo-generators. Procure, test and evaluate remote source lighting for hanger bay and wet well use. Demonstrate Variable Speed Drive (VSD) system for DDG-51 1000 gpm fire pumps; design VSD system for 2000 gpm pumps. Design full scale LHA/LHD stern flap. Design ducting mod to improve exhaust flow of LM2500 engine.
- (U) (\$2,000) Alternative and Renewable Energy Systems: Continue site specific design and support of PV/Diesel hybrid power systems for off-grid applications. Complete commissioning of one grid-connected system using advanced thin-film PV modules. Assemble prototype PV/flywheel hybrid power system to investigate advanced energy storage technologies. Continue development of high efficiency, low emissions power generation system. As assigned DoD technical lead, provide all services with site-specific technology selection and systems engineering support to implement zero emission, renewable/alternative power systems.

3. (U) FY 2003 PLAN:

- (U) (\$1,000) Aircraft: Resume joint effort with F/A-18E/F program to extend the F/A 18C/D Flight Performance Advisory System (FPAS) to the F/A-18E/F. Ensure effectiveness of methodologies and displays, optimize integration and enhance the system. Resume effort to assist the P-3C program to develop the computer to airframe interfaces

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

needed to automate and improve their conceptual FPAS. Continue FOREM development for additional aircraft such as MV-22, E-6A and KC-130.

- (U) (\$2,691) Ships: Continue large scale trials of self-polishing reduced copper/cobiocide and other advanced technology anti-fouling hull coatings. Add second test ship painted with two best self-polishing copper/cobiocide hull coatings. Demonstrate VSD for 2000 gpm fire pumps, and develop for LM2500 cooling fan. Extend on-line water-wash and exhaust flow improvements to turbo-generators. Demonstrate anti-degradation coatings for LM2500 compressor blades. Revive DC fluorescent lighting development.
- (U) (\$2,000) Alternative and Renewable Energy Systems: Continue site specific design and support of PV/Diesel hybrid power systems for off grid applications. Continue design and T&E/support of advanced PV module technology in both off grid and grid-connected applications. Complete integration and T&E of PV/flywheel hybrid power system to investigate advanced energy storage technologies. Investigate Power Electronic Building Block (PEBB) in inverters for power systems. Continue development of high efficiency, low emissions power generation system. As assigned DoD technical lead, provide all services with site-specific technology selection, and systems engineering support to implement zero emission, renewable/alternative power systems.

B. (U) PROGRAM CHANGE SUMMARY

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
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(U) FY 2002 President's Budget:	5,480	3157	
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(U) Adjustments from PRESBUDG:			
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R-1 Line Item 133

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Budget Item Justification
(Exhibit R-2, page 4 of 6)

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FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N PROJECT NUMBER: R0371
 PROGRAM ELEMENT TITLE: Navy Energy Program PROJECT TITLE: Energy Conservation (ENG)

(U) Execution Adjustment	-390		
(U) SBIR Adjustment	-75		
(U) Energy R&D Program Restoral			
(U) Section 8123 Reduction		-28	
(U) FY 2003 President's Budget Submission:	5,015	3,129	5,691

(U) CHANGE SUMMARY EXPLANATION:

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) PE 0601153N (Defense Research Sciences)
(U) PE 0603513N (Shipboard Systems Concept Development)
(U) PE 0603573N (Advanced Surface Machinery Systems)
(U) PE 0603721N (Environmental Protection)
(U) PE 0603724N (Navy Energy Program (ADV))
(U) PE 0604221N (P-3 Modernization Program)
(U) PE 0604231N (Tactical Command Systems)

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 133

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Budget Item Justification
(Exhibit R-2, page 5 of 6)

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FY 2002 RDT&E,N PROGRAM ELEMENT/PROJECT COST BREAKDOWN

DATE: FEBRUARY 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program (ENG)

PROJECT TITLE: Energy Conservation (ENG)

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Engineering Development & Testing	5,015	3,129	5,691

R-1 Line Item 133

RDT&E PE/Project Cost Breakdown
(Exhibit R-3, page 6 of 6)

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EXHIBIT R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N
PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Program
X2134 SHIPBOARD IW EXPLOIT	696	7,067	14,070	15,346	15,984	16,199	16,459	Cont.	Cont.
X2135 CDL-N	1,493	0	0	0	0	0	0	1,493	1,493
Total	2,189	7,067	14,070	15,346	15,984	16,199	16,459	Cont.	Cont.

Note: Project X2135 has been incorporated into Project X2134 beginning in FY 02.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard Information Warfare line includes the following programs: Ships Signal Exploitation Equipment (SSEE), the Program of Record that executes the Maritime Cryptologic Systems for the 21st Century (MCS 21) and Common Data Link - Navy (CDL-N) the Navy Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed SIGINT/COMINT and imagery. These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

B. (U) PROGRAM CHANGE SUMMARY EXPLANATION:

(U) Funding:

FY 2001: -\$16K Section 8086: .7% Pro-Rata Reduction, -\$5 Government-Wide Rescission PL 106-554 Sec. 14, -\$22K Navy Miscellaneous Adjustment.

FY 2002: -\$1,000K Realignment for EKMS Tier 1 and -\$63K Section 8123: Management Reform Initiative.

(U) Schedule: None

(U) Technical: None

R-1 Shopping List - Item No. 134-1 of 134-16

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N PROJECT NUMBER: X2134
PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Program
X2134 SHIPBOARD IW EXPLOIT	696	7,067	14,070	15,346	15,984	16,199	16,459	Cont.	Cont.
Total	696	7,067	14,070	15,346	15,984	16,199	16,459	Cont.	Cont.

Note: Project X2135 has been incorporated into Project X2134 beginning in FY 02.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard Information Warfare line includes the following programs: Ships Signal Exploitation Equipment (SSEE) and Common Data Link - Navy (CDL-N). These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). This program's funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 Accomplishments:

- (U) (\$ 538) Integrated new GCCS-M functionality into BGPHEs-ST baseline.
- (U) (\$ 158) Improved EP3 (air platform) interoperability.

2. (U) FY 2002 PLAN:

- (U) (\$ 495) Initiate development of capturing non-line of sight High Frequency, HF signals for Transportable Radio Direction Finding (TRDF).
- (U) (\$2,265) Initiate development of Cryptologic Unified Build (CUB) software to incorporate latest Defense Information Infrastructure Common Operating Environment (DII COE) release for interoperability of Shipboard IW programs. CUB software is utilized on all Shipboard IW programs. This development effort targets the DII COE 4.X baseline. Integrate Defense Messaging System (DMS) software/upgrades into CUB baseline and test.
- (U) (\$ 655) Initiate and complete development of SSEE Increment E Engineering Development Model (EDM). Includes development and operational testing. Effort is focused on integrating state-of-the-art Electronic Support Measures/Signal Intelligence (ESM/SIGINT) attributes into current surface shipboard IW programs.
- (U) (\$ 567) Expand Cryptologic On-line Trainer (COLT) software for Shipboard IW programs to include expansion of existing SOI simulations and support for Wide Area Network (WAN) training.
- (U) (\$1,885) Integrate new CUB/DII COE 3.X functionality into the SSEE, Incr E baseline, which includes horizon extension capabilities. Continue development effort to maintain interoperability with USAF airborne Primary Mission Equipment, PME.
- (U) (\$1,200) Initiate design and development of CDL-N integrated operator station and Intelligence, Surveillance and Reconnaissance (ISR) processing systems. Continue CDL-N development efforts (begun in Project X2135) for interoperability and integration with emerging Navy sensor systems such as VTUAV, F/A-18 SHARP and EP-3E Multi-int systems.

R-1 Shopping List - Item No. 134-3 of 134-16

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

3. (U) FY 2003 PLAN:

- (U) (\$2,000) Complete development of the High Frequency Non-Line-of-Sight capability. Initiate development of low signature Direction Finding (DF) and Acquisition antenna sub-system. Initiate development of improved Radio Frequency (RF) distribution sub-system. Both antenna and distribution systems will support existing and future ship classes for Shipboard IW programs, handle modern Signals of Interest (SOIs), and increase both shipboard and operational environment interference.
- (U) (\$1,750) Continue development of Cryptologic Unified Build (CUB) software to incorporate latest DII COE releases/updates for interoperability of Shipboard IW programs. CUB software is utilized on all Shipboard IW programs. This development effort targets the DII COE 5.X baseline. Update CUB on-line tutorial software. Initiate development of Blue Forces IW database.
- (U) (\$5,050) Initiate development of SSEE Increment E upgrade. Upgrade includes incorporation of latest CUB release and expansion of signal of interest (SOI) database. Initiate special/modern signal collection and processing development
- (U) (\$ 500) Expand Cryptologic On-line Trainer (COLT) software for Shipboard IW programs to include improvement of existing SOI simulations and support for WAN training.
- (U) (\$2,472) Continue CDL-N development efforts for interoperability and integration with emerging Navy sensor systems such as VTUAV, F/A-18 SHARP and EP-3E Multi-int systems. Continue design and development of CDL-N Block 2 integrated operator station and ISR processing systems. Integrate advanced technology CDL modem.
- (U) (\$2,298) Initiate development of improved Specific Emitter Identification (SEI) software by retooling existing prototypes into a single platform. Continue compatibility testing with SEI collection hardware and software. Initiate expansion of Navy's SEI data management architecture. Facilitate the tactical employment of Navy SEI by addressing various operational issues and problems. Initiate development and testing of SEI software enhancements in GCCS-M (CORRUS), GALE-Lite (SEI-GALE), and other fielded systems as required.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To	Total
	Estimate	Complete	Program						
OPN Line 2360	59,291	55,971	77,066	116,821	63,331	65,524	69,925	Cont.	Cont.
O&M,N 5C2C	3,381	9,106	9,280	10,898	12,979	14,609	16,015	Cont.	Cont.

R-1 Shopping List - Item No. 134-4 of 134-16

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

(U) RELATED RDT&E: PE 0305885G

C. (U) ACQUISITION STRATEGY

BGPHERS

**Note: BGPHERS Capabilities are incorporated into SSEE Incr E beginning in FY02.*

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones				
T&E Milestones		Interoperability Testing		
Contract Milestones		DII COE/CUB 3.X Upgrade		

CDL-N

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones				
T&E Milestones			SHARP Inter-operability Tests	Interoperability Testing
Contract Milestones				

R-1 Shopping List - Item No. 134-5 of 134-16

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Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

Cryptologic Unified Build (CUB)

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones		Integration Testing & Engineering Release CUB 4.X	System Requirements Review CUB 5.X	
		Test Readiness Review CUB 4.X	Critical Design Review CUB 5.X	
T&E Milestones		Interoperability Certification & Shipboard Test	Integration Testing & Engineering Release CUB 5.X	Interoperability Certification & Shipboard Test
Contract Milestones				

R-1 Shopping List - Item No. 134-6 of 134-16

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Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

SPECIFIC EMITER IDENTIFICATION (SEI)

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>	<u>To Complete</u>
Program Milestones				Operational Assessment (LRIP)
Engineering Milestones			-Software Retool Preliminary Design Review (PDR) -Critical Design Review (CDR) -System Requirements Review (SRR) -Software Integration Testing & Engineering Release -Initiate data mgmt architecture developments -Initiate system improvements & fixes -DII COE /CORRUS and SEI-GALE Upgrades	Data management architecture development & testing Hardware and Software Integration /Interoperability Testing
T&E Milestones			-Hardware / Software Compatibility Testing -Software Operational Readiness Testing (ORT) -Operational Assessments Testing (OPEVAL)	-Interoperability Testing Software Operational Readiness Testing (ORT) -Operational Assessments Testing (OPEVAL)
Contract Milestones			Award development contract for system modifications	

R-1 Shopping List - Item No. 134-7 of 134-16

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

SSEE Increment E

*Note: BGPHERS Capabilities are incorporated into SSEE Incr E beginning in FY02.

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>	<u>To Complete</u>
Program Milestones			Operational Assessment (LRIP)	Milestone IIID
Engineering Milestones		Preliminary Design Review (PDR)	Initiate - P ³ I development	P ³ I development and testing
		Integration Testing and Factory Acceptance Test (FAT)		
		Test Readiness Review		
		Extension Horizon Interoperability Testing		
		DII COE/CUB 4.X Upgrade		
T&E Milestones		Development Testing (DT)	Operational Assessments Testing (OPEVAL)	Interoperability Testing
		Operational Assessments Testing (OPEVAL)		Operational Assessments Testing (OPEVAL)
Contract Milestones	Award Development Contract		Award LRIP Contract	Award Full Rate Production Contract

R-1 Shopping List - Item No. 134-8 of 134-16

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Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

Transportable Radio Direction Finder (TRDF)

	<u>FY2001</u>	<u>FY 2002</u>	<u>FY2003</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones		HF Non-Line-of-Sight computer based model	Antenna and RF distribution systems EDM	
T&E Milestones		HF Non-Line-of-Sight capability demonstrated on ships	Complete HF Non-Line-of-Sight DT	DT and Shipboard testing of Antenna and RF Distribution System.
Contract Milestones		Award development contract for HF Non-Line-of-Sight capability.	Award development contract for Antenna and RF distribution system.	

R-1 Shopping List - Item No. 134-9 of 134-16

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

UNCLASSIFIED

EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

Project Number: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

Project Title: Shipboard I W Exploit

Exhibit R-3 Cost Analysis (page 1)									Date: FEB 2002			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5			PROGRAM ELEMENT: 0604721N					Shipboard IW Exploit X2134				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development/Integration	Various	Various	0	630	Jan 01	6,485	Dec 01	12,320	Dec 02	Cont.	Cont.	Cont.
Subtotal Product Development			0	630		6,485		12,320		Cont.	Cont.	Cont.
Remarks:												
Integrated Logistics Support	Various	Various	0	0		0		0				
Subtotal Support			0	0		0		0				
Remarks												
<i>Prior year for CDL-N reflected in Project x2135</i>												

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

Project Number: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

Project Title: Shipboard I W Exploit

Exhibit R-3 Cost Analysis (Page 2)								Date FEB 2002				
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5				PROGRAM ELEMENT: 0604721N				Shipboard IW Exploit: X2134				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental /Operational T&E	Various	Various	0	66	Jan 01	582	Dec 01	1,750	Dec 02	Cont.	Cont.	Cont.
Subtotal T&E			0	66		582		1,750		Cont.	Cont.	Cont.
Remarks												
Project Management	Various	Various	0	0		0		0				
Subtotal Management			0	0		0		0				
Remarks												
<i>Prior year for CDL-N reflected in Project x2135</i>												
Total Cost			0	696		7,067		14070		Cont.	Cont.	Cont.

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N DATE: FEB 2002
PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT NUMBER: X2135
PROJECT TITLE: CDL-N

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Program
X2135									
CDL-N	1,493	0	0	0	0	0	0	0	1,493

Note: Starting in FY02 Project X2135 funding transferred to Project X2134.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Common Data Link-NAVY (CDL-N) (formerly CHBDL) equipment will provide a common high bandwidth data link shipboard terminal for the receipt of signal, imagery, second counter-intelligence data from remote airborne sensors and the transmission of link and sensor control data to airborne platforms. Signal intelligence data is received from the Battle Group Passive Horizon Extension System (BGPHER) Airborne Component (AC) and delivered to the BGPHER Shipboard Terminal. Imagery intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Joint Service Imagery Processing System - Navy (JSIPS-N). Acoustic intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Aircraft Carrier Tactical Support Center.

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EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

DATE: FEB 2002

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 Accomplishments:

- (U) (\$470) Continued development efforts for interoperability with other emerging sensor systems
- (U) (\$325) Completed development efforts for ship-to-ship data connectivity.
- (U) (\$698) Completed study of multi-queuing capability development.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

* See Project x2134.

(U) RELATED RDT&E:

PE 0603261N Project A2174 Joint Service Imagery Processing Systems - Navy (JSIPS-N).

UNCLASSIFIED

EXHIBIT R-2A, FY 2003 RDT&E,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

DATE: FEB 2002

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

C. (U) ACQUISITION STRATEGY

CDL-N

FY2001

FY 2002

FY2003

To Complete

Program Milestones

Engineering Milestones Completed Multi
Queuing Capability
study

T&E Milestones

Contract Milestones

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EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: CDL-N

Exhibit R-3 Cost Analysis (page 1)									Date: FEB 2002			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5				PROGRAM ELEMENT: 0604721N					CDL-N X2135			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	Loral- Salt Lake, UT	20,502	0		0		0		20,502	20,502	20,502
Hardware Development/Integration	Various	Various	5,057	1,343	Dec 00	0		0		*	*	*
Subtotal Product Development			25,559	1,343		0		0		*	*	*
Remarks:												
Integrated Logistics Support	Various	Various	254	0		0		0		*	*	*
Subtotal Support			254	0		0		0		*	*	*
Remarks												
*Transferred to Project X2134 in FY02												

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EXHIBIT R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: CDL-N

Exhibit R-3 Cost Analysis (page 2)									Date: FEB 2002			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5				PROGRAM ELEMENT: 0604721N				CDL-N X2135				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental/Operational T&E	Various	Various	1,515	150	Dec 00	0		0		*	*	*
Subtotal T&E			1,515	150		0		0		*	*	*
Remarks												
Project Management	Various	Various	465	0		0		0		*	*	*
Subtotal Management			465	0		0		0		*	*	*
Remarks												
* Transferred to Project X2134 in FY02												
Total Cost			27,793	1,493		0		0		*	*	*

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604727N Joint Standoff Weapon System				
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	675.071	26.653	26.615	16.652	0.796	0.596	0.396	0.346		747.125
A2068 Joint Standoff Weapon (JSOW)	675.071	26.653	26.615	16.652	0.796	0.596	0.396	0.346		747.125
Quantity of RDT&E Articles	3	3	19							25
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night and adverse weather conditions. JSOW will enhance aircraft survivability as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. The JSOW Baseline (AGM-154A) variant includes a kinematically efficient airframe, an integrated Inertial/Global Positioning System (INS/GPS) navigation capability, and a BLU-97/B submunition payload. This weapon is designed up front for pre-planned product improvements. The JSOW/BLU-108 (AGM-154B) variant incorporates the Sensor Fuze Weapon submunition (BLU-108) into the baseline vehicle. The JSOW/BLU-108 variant will provide a standoff delivery capability against massed armor and land combat vehicles. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. The JSOW/BLU-108 MOT&E is scheduled to begin in FY03 after an 18 month LCCS ECP effort that started in FY01. The JSOW Unitary will provide increased accuracy and lethality and the capability for aimpoint selection. The Unitary Systems Development and Demonstration (SD&D) phase of the program concludes with the completion of Operational Evaluation (OPEVAL). A Low Rate Initial Production Contract Award is planned for FY-03. Through adherence to international standards for weapons interfaces and weight and dimension considerations, JSOW will be compatible with Air Force and NATO aircraft. JSOW is a joint Navy/Air Force program.</p> <p>The Unitary SD&D program phase incorporates a 500 lb class "Unitary" warhead that includes the integration of the Broach Multiple Warhead System (MWS) into the JSOW AGM-154C variant. This is an FY01 Congressionally approved New Start effort. The Broach MWS provides blast/fragmentation effects as well as enhanced penetration capability against hard point targets. The Broach MWS development and integration risk is reduced significantly by the on going Broach developmental efforts of the United Kingdom Storm Shadow Program, the JSOW Foreign Warhead Comparative Testing previously conducted, and the early provisioning for Broach in the JSOW Unitary Roadmap.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it encompasses development and demonstration of new end-items prior to production approval decision.</p>										

R-1 SHOPPING LIST - Item No. 135

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon System					PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)					
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	675.071	26.653	26.615	16.652	0.796	0.596	0.396	0.346		747.125	
RDT&E Articles Qty	3	3	19							25	

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night and adverse weather conditions. JSOW will enhance aircraft survivability as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. The JSOW Baseline (AGM-154A) variant includes a kinematically efficient airframe, an integrated Inertial/Global Positioning System (INS/GPS) navigation capability, and a BLU-97/B submunition payload. This weapon is designed up front for pre-planned product improvements. The JSOW/BLU-108 (AGM-154B) variant incorporates the Sensor Fuze Weapon submunition (BLU-108) into the baseline vehicle. The JSOW/BLU-108 variant will provide a standoff delivery capability against massed armor and land combat vehicles. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. The JSOW/BLU-108 MOT&E is scheduled to begin in FY03 after an 18 month LCCS ECP effort that started in FY01. The JSOW Unitary will provide increased accuracy and lethality and the capability for aimpoint selection. The Unitary SD&D phase of the program concludes with the completion of Operational Evaluation (OPEVAL). A Low Rate Initial Production Contract Award is planned for FY-03. Through adherence to international standards for weapons interfaces and weight and dimension considerations, JSOW will be compatible with Air Force and NATO aircraft. JSOW is a joint Navy/Air Force program.

The Unitary SD&D program phase incorporates a 500 lb class "Unitary" warhead that includes the integration of the Broach Multiple Warhead System (MWS) into the JSOW AGM-154C variant. This is an FY01 Congressionally approved New Start effort. The Broach MWS provides blast/fragmentation effects as well as enhanced penetration capability against hard point targets. The Broach MWS development and integration risk is reduced significantly by the on going Broach developmental efforts of the United Kingdom Storm Shadow Program, the JSOW Foreign Warhead Comparative Testing previously conducted, and the early provisioning for Broach in the JSOW Unitary Roadmap.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604727N Joint Standoff Weapon System	A2068 Joint Standoff Weapon (JSOW)
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:		
1. FY 2001 ACCOMPLISHMENTS:		
(U) Unitary:		
(\$17.235) Continued SD&D efforts, configuration audits and environmental testing		
(\$ 2.117) Conducted combined Development Testing and Operational Testing (DT/OT)		
(\$ 2.186) Continued systems engineering technical support; completed insensitive munitions qualification and system safety approvals		
(\$ 5.100) Started Broach Warhead development		
(U) BLU-108		
(\$.015) Performed MOT&E planning/preparations		
2. FY 2002 PLANS:		
(U) Unitary:		
(\$18.093) Continue SD&D efforts, configuration audits and environmental testing and perform Broach integration		
(\$ 4.900) Continue Broach Warhead development		
(\$ 2.045) Conduct combined Development Testing and Operational Testing (DT/OT)		
(\$.771) Continue systems engineering technical support; complete insensitive munitions qualification and system safety approvals		
(\$.806) Portion of extramural program reserved for Small Business Innovaion Research assessment in accordance with 15 USC 638		
3. FY 2003 PLANS:		
(U) Unitary:		
(\$ 7.552) Continue SD&D efforts, configuration audits and environmental testing and perform Broach integration		
(\$ 2.900) Continue Broach Warhead development		
(\$ 4.200) Conduct combined Development Testing and Operational Testing (DT/OT)		
(\$ 0.800) Continue systems engineering technical support; complete insensitive munitions qualification and system safety approvals		
(U) BLU-108		
(\$ 1.000) Conduct combined Development Testing and Operational Testing (DT/OT)		
(U) Baseline		
(\$ 0.200) JMPS Migration		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N / BA-5	0604727N Joint Standoff Weapon (JSOW)			A2068 Joint Standoff Weapon (JSOW)				
(U) B. PROGRAM CHANGE SUMMARY:								
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>					
(U) FY 2002 President's Budget:	27.694	26.849						
(U) Adjustments from the FY2002 President's Budget:	-1.041	-0.234						
(U) FY 2003 President's Budget Submit:	26.653	26.615	16.652					
 CHANGE SUMMARY EXPLANATION:								
<p>(U) Funding: The FY 01 decrease of \$1.041 million reflects a \$.300 million decrease for reprioritization of requirements within the Navy and a \$.741 million decrease for a Small Business Innovative Research assessment. The FY 02 decrease of \$.234 million reflects a \$.237 million decrease for an undistributed congressional reduction and a \$.003 million increase for use on the Unitary Broach Warhead Development.</p> <p>(U) Schedule: Unitary: DT&E has changed from 1Q/01-1Q/03 to 1Q/01-3Q/03 and 1st Free Flight has changed from 4Q/01 to 1Q/02 due to technical issues with Seeker to GEU interface.</p> <p>(U) Technical: Not Applicable</p>								
 (U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
USN WP,N; BLI: 223000 JSOW								
\$s	161.307	0.000	139.537	188.906	167.205	166.676	149.829	2697.491
Qtys	29	0	363	555	522	502	424	10,042
USAF WP,F; BLI: 27324F* JSOW								
\$s	52.893	29.376	55.843	127.892	242.739	253.050	245.924	995.384
Qtys	0	29	116	319	631	645	597	3,572

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 4 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																																																																											
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon (JSOW)	PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)																																																																																												
<p>(U) D. ACQUISITION STRATEGY: The contracting strategy for JSOW is planned to be sole source for the life of the program. Cost type contracts were used for the SD&D program effort. Fixed price type contracts will be used for production.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse; margin-top: 20px;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td colspan="5" style="padding-top: 10px;">(U) Program Milestones</td> </tr> <tr> <td style="padding-left: 20px;">Baseline</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">BLU-108</td> <td></td> <td></td> <td style="text-align: center;">4Q/03 MS-III</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Unitary</td> <td></td> <td></td> <td></td> <td style="text-align: center;">1Q/04 MS-III</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">(U) Engineering Milestones</td> </tr> <tr> <td style="padding-left: 20px;">Baseline</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">BLU-108</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Unitary</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">(U) T&E Milestones</td> </tr> <tr> <td style="padding-left: 20px;">Baseline</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">BLU-108</td> <td></td> <td></td> <td style="text-align: center;">1Q/03-3Q/03 OPEVAL (MOT&E)</td> <td></td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">(U) Unitary</td> </tr> <tr> <td></td> <td style="text-align: center;">1Q/01-3Q/03 DT&E</td> <td style="text-align: center;">1Q/02 1ST Free Flight</td> <td style="text-align: center;">3Q/03-4Q/03 OPEVAL</td> <td></td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">(U) Contract Milestones</td> </tr> <tr> <td style="padding-left: 20px;">Baseline</td> <td></td> <td></td> <td style="text-align: center;">2Q/03 FRP</td> <td style="text-align: center;">2Q/04 FRP</td> </tr> <tr> <td style="padding-left: 20px;">BLU-108</td> <td></td> <td style="text-align: center;">3Q/02 LRIP</td> <td style="text-align: center;">2Q/03 LRIP</td> <td style="text-align: center;">2Q/04 FRP</td> </tr> <tr> <td style="padding-left: 20px;">Unitary</td> <td></td> <td></td> <td style="text-align: center;">1Q/03 LRIP</td> <td style="text-align: center;">1Q/04 FRP</td> </tr> </tbody> </table>						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones					Baseline					BLU-108			4Q/03 MS-III		Unitary				1Q/04 MS-III	(U) Engineering Milestones					Baseline					BLU-108					Unitary					(U) T&E Milestones					Baseline					BLU-108			1Q/03-3Q/03 OPEVAL (MOT&E)		(U) Unitary						1Q/01-3Q/03 DT&E	1Q/02 1 ST Free Flight	3Q/03-4Q/03 OPEVAL		(U) Contract Milestones					Baseline			2Q/03 FRP	2Q/04 FRP	BLU-108		3Q/02 LRIP	2Q/03 LRIP	2Q/04 FRP	Unitary			1Q/03 LRIP	1Q/04 FRP
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																																																																																										
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R-1 SHOPPING LIST - Item No. 135

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604727N Joint Standoff Weapon System			A2068 Joint Standoff Weapon (JSOW)						
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
DEM/VAL contract	C/CPIF	Raytheon Tucson, AZ	22.101								22.101	22.101
Pre-MS-I contract	C/CPIF	Raytheon Tucson, AZ	3.275								3.275	3.275
Pre-E&MD contract	C/CPIF	Raytheon Tucson, AZ	3.143								3.143	3.143
Baseline E&MD contract	C/CPIF	Raytheon Tucson, AZ	243.776								243.776	243.776
Unitary pre-E&MD Contract	SS/CPIF	Raytheon Tucson, AZ	6.316								6.316	6.316
Unitary E&MD Contract	SS/CPIF/AF	Raytheon Tucson, AZ	184.738	17.235	10/00	18.093	10/01	7.552	10/02		227.618	227.618
Unitary E&MD Contract Award Fees (Note 2)	Fee	Raytheon Tucson, AZ	7.118								7.118	7.118
BLU-108 Pre-E&MD Contract	SS/CPIF	Raytheon Tucson, AZ	0.474								0.474	0.474
BLU-108 E&MD Contract	SS/CPIF	Raytheon Tucson, AZ	10.671								10.671	10.671
BLU-108 Smart Rack	SS/CPIF	MTechnology Horsham, PA	4.585								4.585	4.585
F/A-18 JSOW Integration	SS/CPIF	McDonnell Douglas St. Louis, MO	16.870								16.870	16.870
Software Integration IDIQ/TAMPS	SS/CPIF	Raytheon Tucson, AZ	2.191								2.191	2.191
BLU-108 SFW E&MD	SS/CPIF	Textron	2.923								2.923	2.923
SFW E7MD Award Fee (Note 2)	Award Fee	Textron	0.080								0.080	0.080
Systems Engineering Technical Support	WX	NAWCWD China Lake, CA	103.400	1.606	10/00	0.521	10/01	0.600	10/02		106.127	
F/A-18 Integration	WX	NAWCWD China Lake, CA	15.058								15.058	
Engineering and Technical Services	Various	Various	16.900	0.300	10/00	0.150	10/01	0.100	10/02		17.450	
Miscellaneous Contracts (<\$1M)	Various	Various	6.612	0.280	10/00	0.100	10/01	0.100	10/02		7.092	
Unitary BROACH Warhead	SS/FPFF	BAE Chorley, England	0.000	5.100	05/01	4.900	10/01	2.900	10/02		12.900	12.900
JMPS Migration	SS/FPFF	Raytheon Tucson, AZ	0.000					0.200	10/02	2.134	2.334	2.334
Subtotal Product Development			650.231	24.521		23.764		11.452		2.134	712.102	

Remarks:
 Note 1: Historical Unitary SD&D Award Fee information (percent awarded): Fee#1: 98.3%, Fee#2: 90.1%, Fee#3: 98.0%, Fee #4: 100%, Note 2: No historical information available; this is a one-time award fee.

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604727N JSOW			PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)						
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	NAWCWD China Lake, CA	19.953	2.032	10/00	1.935	10/01	2.200	10/02		26.120	
Operational Test & Evaluation	WX	OPTEVFOR Norfolk, VA	4.887	0.100	10/00	0.110	10/01	3.000	10/02		8.097	
Subtotal T&E			24.840	2.132		2.045		5.200		0.000	34.217	
Remarks:												
SBIR Assessment						0.806					0.806	
Subtotal Management			0.000	0.000		0.806		0.000		0.000	0.806	
Remarks: There are no Support Category requirements												
Total Cost			675.071	26.653		26.615		16.652		2.134	747.125	
Remarks:												

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Exhibit R-2, RDTEB Budget Item Justification
(Exhibit R-2, page 7 of 7)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5				Ship Self Defense (Detect & Control)/0604755N					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	113.237	63.407	61.966	40.843	24.813	0.099	0.099	CONT	CONT
SPS Improvement Program /20166	0.000	4.855	3.973	1.988	0.000	0.000	0.000	0.000	81.842
5" Rolling Air Frame Missile / 20167	3.647	0*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
NATO Sea Sparrow / 20173	11.351	0.000	0.000	0.000	0.000	0.000	0.000	0.000	CONT
QRCC / K2178/K2794*	42.661	44.081	48.673	36.386	24.813	0.099	0.099	CONT	CONT
NULKA / K2190 / K2441/K9081	3.097	9.714*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
AIEWS / K2309	44.409	2.081*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
IRST/22649	8.072	2.676	9.320	2.469	0.000	0.000	0.000	0.000	75.060
Quantity of RDT&E Articles									
<p>* FY02 Congressional Adds: RAM (+\$6.939) should be in PE 64756, (NULKA (+\$2.775) and AIEWS (+\$2.081) should be in PE 64757.</p> <p>A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Detect & Control aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets.</p>									

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE Ship Self Defense/0604755N	
<p>These SSD projects address and coordinate the detect and control functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Multi-sensor integration is being addressed through the efforts of Quick Reaction Combat Capability (QRCC) (K2178), while sensor improvements are addressed through the SPS Improvements (20166) and Infrared Search and Track (K2442/22649). These provide improvements to both active and passive detection.</p> <p>(U) CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated response to the ASCM threat are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (K2178) efforts. In addition, that project provides for the central system engineering management of SSD developments, including efforts required to integrate SSDS with the Advanced Combat Direction System (CDS) for those ships having a CDS.</p>		

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5		Ship Self Defense/0604755N	
Program Change Summary:	FY 2001	FY 2002	FY 2003
FY 2002 President's Budget:	114.514	52.163	
Appropriated Value:	87.149	52.136	
Adjustments to FY2001/2002 President's Budget	26.088	11.271	
FY 2003 Pres Budget Submit:	113.237	63.407	61.966
Funding:			
FY01: Funding increase due to Program Adjustments for: SSDS (+\$25.515), AIEWS J(+\$.900), NATO (+\$2.012) and Minor Pricing Adjustments of (-\$2.339).			
FY02: Funding increase due to Congressional Adds for: RAM (+\$7.000), AIEWS (+\$2.100), NULKA (+\$2.800), and Minor Pricing Adjustments (-\$.639).			
Schedule: Not Applicable			
Technical: Not Applicable			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				PROJECT NAME AND NUMBER					
RDT&E, N/BA5				SPS Improvement Program/20166					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	4.855	3.973	1.988	0.000	0.000	0.000	0.000	81.842
RDT&E Articles Qty									
<p>A. Mission Description and Budget Item Justification: This program develops and tests performance and reliability upgrades for search radar equipment to meet the evolving threat.</p> <p>1. (U) FY 2002 PLAN: - (U) (\$2.855) Begin AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System. - (U) (\$2.000) Continue Developmental Testing using Lightweight Antenna configuration.</p> <p>2. (U) FY 2003 PLAN: - (U) (\$3.973) Continue AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.</p> <p>3. (U) FY 2004 PLAN: - (U) (\$1.988) Continue AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.</p>									

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166					
B. Other Program Funding Summary									
	<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN LINE 511000 (AN/SPQ-9B)	1.531	22.054	17.589	10.080	25.832	24.796	30.475	CONT.	CONT.
C. Acquisition Strategy: AN/SPQ-9B Radar is a directed sole source contract to Northrop Grumman Norden Systems for LRIP, and upon successful completion of TECHEVAL/OPEVAL, entering into Full Rate Production. Beginning in FY 2002, Lockheed Martin to develop AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.									
D. Schedule Profile: See attached.									

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

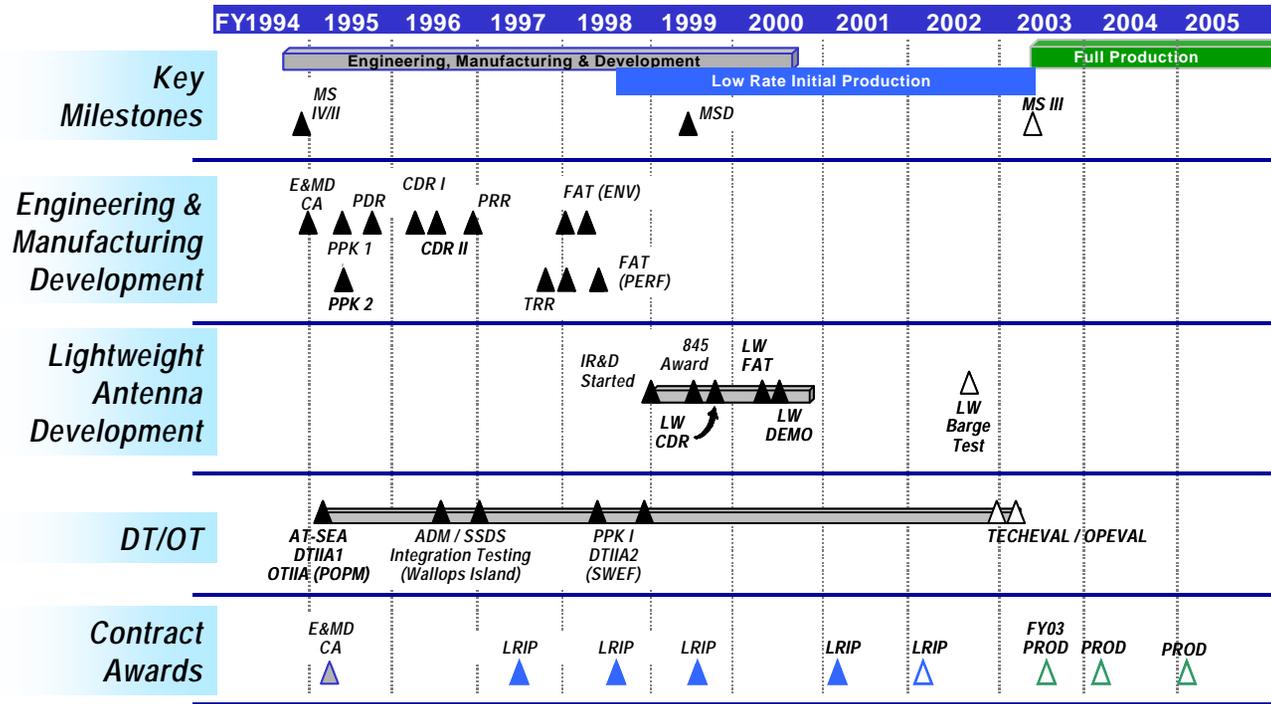
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA5

SHIP SELF DEFENSE 0604755N

SPS Improvement Program/20166



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Exhibit R-3 Cost Analysis (page 1)										DATE: January 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	CPAF	NGNS, Melville, NY	37.744	0.000	N/A	2.000	N/A	0.000	N/A	0.000	39.744	39.744
Primary Hardware Development	FFP	*ITT/G, Van Nuys, CA	7.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	7.000	7.000
Primary Hardware Development	CPAF	LM, Moorestown, NJ	0.000	0.000	N/A	2.855	N/A	3.973	N/A	1.988	8.816	8.816
Subtotal Product Development			44.744	0.000		4.855		3.973		1.988	55.560	55.56
Remarks: *Development cost of AN/SPS-48 Transmitter.												
Development Support Equipment												
Software Development	WR	PHD NSWC, CA	5.985	0.000	N/A	0.000	N/A	0.000	N/A	0.000	5.985	5.985
Training Development		Various	2.112								2.112	2.112
Integrated Logistics Support	WR	Various	2.112	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.112	2.112
Configuration Management	PD/WR	Various	6.580	0.000	N/A	0.000	N/A	0.000	N/A	0.000	6.580	6.580
Technical Data	WR	Various	3.170	0.000	N/A	0.000	N/A	0.000	N/A	0.000	3.170	3.170
Subtotal Support			19.959	0.000		0.000		0.000		0.000	19.959	19.959
Remarks: Various Activities includes PHD NSWC, NRL, NSWC/CD, and APL												

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Exhibit R-3 Cost Analysis (page 2)										DATE: January 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5			PROGRAM ELEMENT SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER SPS Improvement Program/20166					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
DT&E	WR/RC	PHD NSWC, CA	1.665	0.000	N/A	0.000	N/A	0.000		0.000	1.665	1.665
DT&E	WR	NRL, Washington, DC	1.233	0.000	N/A	0.000	N/A	0.000		N/A	1.233	1.233
OT&E	WR/RC	PHD NSWC, CA	0.560	0.000	N/A	0.000	N/A	0.000		N/A	0.560	0.560
OT&E	WR	NRL, Washington, DC	0.410	0.000	N/A	0.000	N/A	0.000		N/A	0.410	0.410
Subtotal T&E			3.868	0.000	N/A	0.000	N/A	0.000		0.000	3.868	3.868
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	2.455	0.000	N/A	0.000	N/A	0.000		0.000	2.455	2.455
Subtotal Management			2.455	0.000	N/A	0.000		0.000		0.000	2.455	2.455
Remarks:												
Total Cost			71.026	0.000		4.855		3.973		1.988	81.842	81.842
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	42.661	44.081	48.673	36.386	24.813	0.099	0.099	0.000	0.000
RDT&E Articles Qty									
<p>A. Mission Description and Budget Item Justification The Quick Reaction Combat Capability (QRCC) project implements an evolutionary acquisition of improved ship self defense capabilities against Anti-Ship Cruise Missiles (ASCMs) for selected ships. The Ship Self Defense System (SSDS) is the integrating element of QRCC. The design integrates several existing stand-alone Anti-Air Warfare systems that do not individually provide the complete detection, control, and engagement capabilities needed against low flying, high speed ASCMs with low radar cross sections. The SSDS integration concept fulfills the need for an automated detection, quick reaction and multi-target engagement capability emphasizing performance in the littoral environment. SSDS replaces manual control of several self-defense systems with a single integrated capability under the computer-aided control of ship operators. System design emphasizes use of non-developmental items, commercial standards, Next Generation Computer Resources, computer program reuse and open architecture. SSDS is a physically distributed, open architecture computer network consisting of commercially available or previously developed hardware. It includes a command table that uses components of the Navy's AN/UYQ-70 standard display for human-machine interface, commercially available local area network access units and circuit cards, and commercially available fiberoptic cabling.</p> <p>SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A electronic countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile and Phalanx Close-In Weapon System and is being installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to integrate with ACDS and Cooperative Engagement Capability (CEC) on CV(N), LPD-17, LHD and LHA ship classes.</p> <p>SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 consists of leveraging critical experiments and re-use of technology and software. SSDS MK2 is in development and will integrate other ship self defense elements, such as the AN/SPQ-9B radar, and NATO Sea-sparrow missile system with the CEC to improve joint interoperability. SSDS MK2 provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both ownship and remote data in support of the AAW Capstone Requirements. SSDS MK2 will also incorporate selected features of the Advanced Combat Direction System to become the integrated, coherent real time Command and Control System for Aircraft Carriers and Amphibious ships. It will: increase operational capabilities; improve combat readiness and Battle Group Interoperability; and promote standardization. It will also introduce new shipboard tactical displays and support equipment, as well as, implement interfaces common with those used by AEGIS to facilitate transition to Common Command and Decision.</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 Accomplishments:</p> <ul style="list-style-type: none">- (U) (\$21.306) Continued SSDS MK 2 Mod 1/2 computer program coding, unit testing and multi-element integration testing.- (U) (\$ 5.421) Conducted developmental testing as Surface Combat System Center (SCSC) Wallops Island and modified software as required.- (U) (\$ 4.107) Completed development integration, began test of SSDS MK 2 Mod 0 efforts, and delivered to CVN 68, USS NIMITZ.- (U) (\$.614) Continued documentation updates, training curriculum updates and ILS planning.- (U) (\$.389) Began systems engineering for LHD unique integration efforts with SSDS MK 2.- (U) (\$ 5.000) Applied Labor Rate Adjustment on the development, integration and delivery Raytheon contract.- (U) (\$ 5.824) Coordinate and document Combat System Integration and Interoperability Requirements for the CVN68 BG, USS NIMITZ. <p>2. FY 2002 Plan:</p> <ul style="list-style-type: none">- (U) (\$27.381) Continue computer program coding, unit testing and multi-element integration testing.- (U) (\$ 5.000) Post test analysis and computer program correction for Mod 0.- (U) (\$ 5.000) Development Test (DT)/Distributed Engineering Plant (DEP) testing at SCSC Wallops Island on CVN 68 and CVN 76.- (U) (\$ 5.700) Apply remaining Labor Rate Adjustment on the development, integration and delivery Raytheon contract.- (U) (\$ 1.000) Complete DT and Operational Test (OT) on SSDS MK 2 Mod 0 configuration. <p>3. FY 2003 Plan:</p> <ul style="list-style-type: none">- (U) (\$26.511) Complete computer program development of the SSDS MK 2 Mod 1/2.- (U) (\$ 5.000) Test and Evaluation on SSDS MK 2 Mod 1 configuration CVN 76 at Wallops Island.- (U) (\$ 8.600) Post land based combat system test analysis and computer program correction of CVN 76 configuration.- (U) (\$ 2.000) Test preparation and documentation for LPD 17 configuration testing efforts planned for FY04.- (U) (\$ 6.562) Software engineering and computer program coding and begin test preparations for the LHD unique capabilities		

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
B. Other Program Funding Summary										
QRCC / K2178	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	
OPN 523900, 523905, 523906	9.221	39.029	47.226	63.008	46.013	35.481	32.487	211.23	611.195	
O&MN 14DRO WPN Maint. QRCC	7.813	9.827	11.147	12.778	12.888	13.03	14.21	CONT.	CONT.	
SCN CV(N) ship class	0	0	56.887	0	0	0	0	0	56.887	
SCN LPD ship class	0	44.298	45.517	47.439	21.821	22.258	0	0	181.333	
Related RDT&E: PE 0603658N (Cooperative Engagement Capability)										
C. Acquisition Strategy: LSD class procurements and installations are complete. These systems were procured under a Firm Fix Price (FFP) Contract. The FY00 requirements also include CVN 68 and 1 shore based trainer. The first SSDS MK 2 system procurements took place under a Cost Plus Award Fee contract in FY99 for the CVN 76, LPD 17, LPD 18 and CVN 69. Follow-on procurements for additional ships of the CV(N), LPD and LHD classes will be made using FFP contracts.										

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

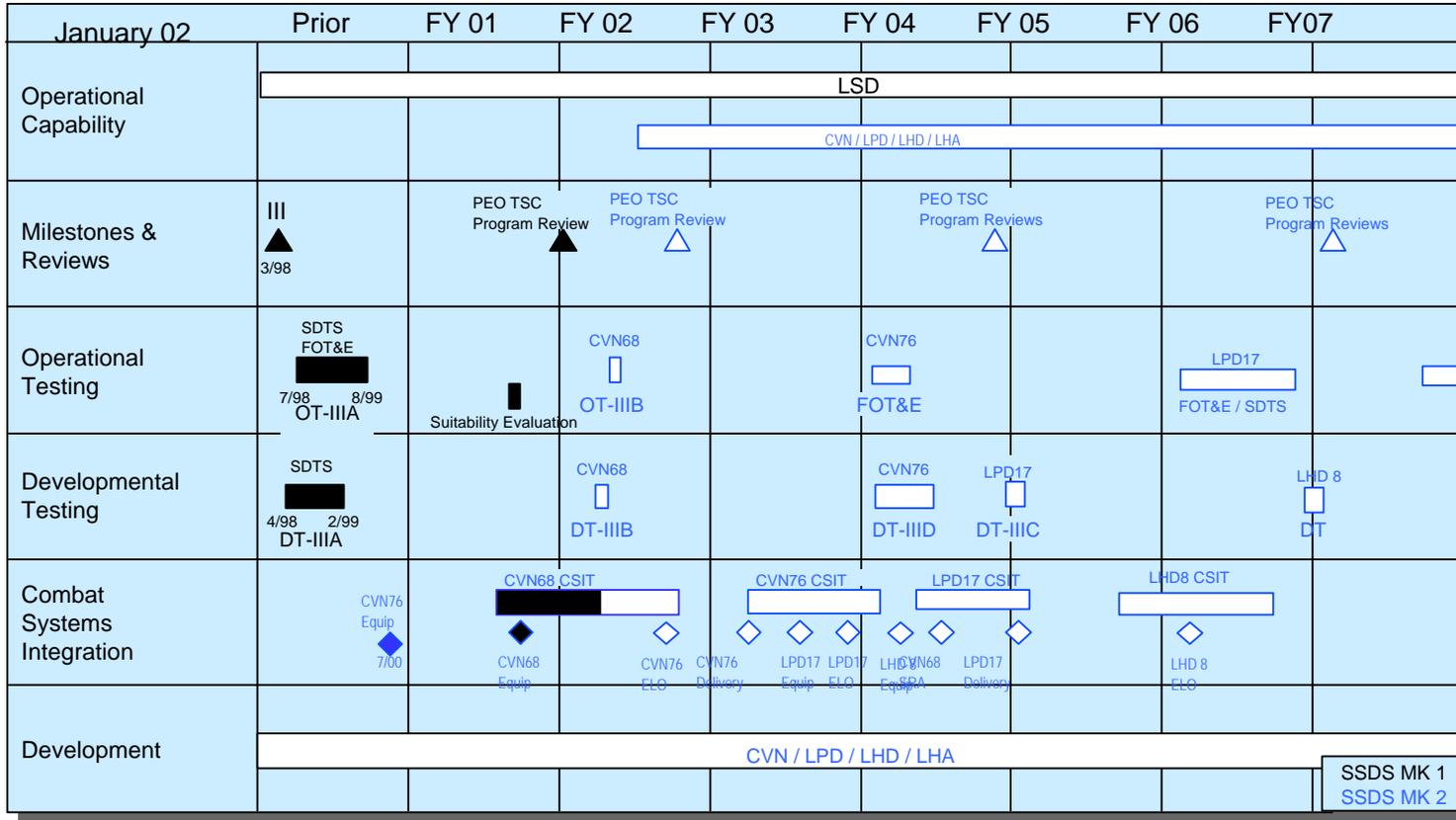
PROJECT NAME AND NUMBER

RDT&E, N/BA5

SHIP SELF DEFENSE 0604755N

Quick Reaction Combat Capability / K2178

D. Schedule Profile:



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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Product Development												
QRCC / K2178	WR	NAVSEA/DD-Dahlgren, VA	15.123	2.762	10/00	2.513	10/01	3.000	10/02	CONT	CONT	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	25.026	1.350	11/00	1.804	11/01	2.500	11/02	CONT	CONT	N/A
Systems Engineering	WR	NAVSEA/PHD-Pt Hueneme,CA	6.495	2.348	N/A	0.480	10/01	0.950	10/02	CONT	CONT	N/A
Systems Engineering	WR	NAVSEA/PHD-Dam Neck, VA	0.000	1.037	N/A	0.745	10/01	1.600	10/02	CONT	CONT	N/A
Product Development	SS/CPAF	RSC(5108)-San Diego, CA	21.204	23.124	10/00	26.426	10/01	26.093	TBD	CONT	CONT	120.001
Systems Engineering	SS/CPAF	RSC(5466)- San Diego, CA	20.353	0.000	N/A	0.000	N/A	0.000	N/A	0.000	20.353	20.353
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	2.791	2.299	3/01&9/01	4.432	3/01&9/01	4.390	TBD	CONT	CONT	N/A
Award Fees	SS/CPAF	RSC(5466)- San Diego, CA	2.163	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.163	N/A
Risk Reduction / EMD	Various	Various	76.366	0.000	N/A	0.000	N/A	0.000	N/A	0.000	76.366	76.366
Misc.	Various	Various	0.000	0.175	09/01	0.000	N/A	0.000	N/A	0.000	0.175	N/A
Subtotal Product Development			169.521	33.095		36.400		38.533		CONT	CONT	216.720
Remarks: Misc. product development provides Human Machine Interface improvements to MK 2 and enhancements for On Board training capability for USS NIMITZ.												
QA / RMA												
Systems Engineering	WR	NWAS Corona	8.291	0.325	10/00	0.100	10/01	0.200	10/02	0.400	9.316	
Subtotal Support			8.291	0.325		0.100		0.200		0.400	9.316	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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												
QRCC / K2178	WR	NAVSEA/PHD-Pt Hueneme, CA	22.037	1.012	10/00	1.167	10/01	1.892	10/02	0.000	26.108	N/A
Developmental Test & Evaluation	WR	NAVSEA/PHD-Dam Neck, VA	0.000	1.105	10/00	1.060	10/01	2.823	10/02	0.000	4.988	
Developmental Test & Evaluation	WR	NAVSEA DD, Wallops Island	12.502	1.287	10/00	2.500	10/01	2.699	10/02	3.500	22.488	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	0.618	1.806	10/00	0.986	10/01	1.100	N/A	0.000	4.510	N/A
Developmental Test & Evaluation	WR	NAVSEA/CORONA, Corona CA	0.000	0.251	10/00	0.747	10/01	0.850	10/02	0.000	1.848	
Developmental Test & Evaluation	WR	OPTEVFOR	0.682	0.000	10/00	0.181	10/01	0.250	10/02	0.000	1.113	N/A
Misc.	Various	Various	0.000	2.735	09/01	0.000	N/A	0.000	N/A	0.000	2.735	
Subtotal T&E			35.839	8.196		6.641		9.614		3.500	63.790	N/A
Remarks: Misc. DT&E supports CVN68 USS NIMITZ Battle Group Interoperability.												
Program Management support												
Program Management support			5.676	1.045	N/A	0.940	N/A	0.326	N/A	0.670	8.657	N/A
Subtotal Management			5.676	1.045		0.940		0.326		0.670	8.657	N/A
Remarks: Program management support includes travel and support services.												
Total Cost			219.327	42.661	N/A	44.081	N/A	48.673	N/A	CONT	CONT	N/A
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification						DATE:			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N*			PROJECT NAME AND NUMBER NULKA DECOY/K2190/K2441/K9081				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	3.097	9.714*							
RDT&E Articles Qty									
<p>A. (U) Mission Description and Budget Item Justification The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 Accomplishments: - (U) (\$3.097) Completed AIEWS integration. Prepared detailed specification for an infra-red (IR) material payload and dispensing mechanism. Conducted at-sea test to support tactics development.</p> <p>2. (U) FY 2002 Plan: (U) FY02 funding of (\$2.775) should be in PE 0604757N K2190 *(U) FY 02 also reflects Congressional Adds of (\$6.939). Project Numbers K2190 (\$1.388) and K9081 (\$5.551) apply. These should be reflected in Program Element 0604756/20167. Funding will be used to commence development and test of the SEARAM ECP to the RAM MK 39 Guided Missile Weapon System.</p> <p>3. (U) FY 2003 Plan: N/A</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N*	PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441/K9081

B. (U) Other Program Funding Summary

	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007
OPN Line 553000/553005	36.872	27.269	27.976	35.888	43.283	44.178	40.674
O&M,N Line 1D4D 14DR0	4.300	2.478	2.085	2.798	3.321	3.375	3.463

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDTE&E, N/BA5			SHIP SELF DEFENSE 0604757N			NULKA Decoy/K2190/K2441/K9081						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Product Development/Softwr Dev	SS/CPFF	Raytheon Co., Tucson AZ				6.939*						
Product Development	WR	NSWC Crane, IN	2.838	0.417	10/00							
	WR	NSWC Indian Head, MD	2.047									
	WR	NSWC Dahlgren, VA	5.499	0.736	10/00	0.477						
	WR	NSWC Port Hueneme, CA	0.908	0.050	12/00	0.067						
	WR	NRL Washington, DC	3.723	0.541	12/00							
	SS/CPFF	Sippican Boston, MA	3.592			1.832						
	SS/CPFF	BAeA, Australia	5.953			0.100						
	SS/CPFF	TBD	0.000									
	PD	NAVSUP Washington, DC	2.400									
Subtotal Product Development			26.960	1.744		9.714						
Remarks: *Congressional Adds of \$6.939 ,Proj K2190 (1.388) and K9081 (\$5.551) should be in PE 64756/20167. Congressional Add of (+\$2.775) should be in PE 64757/k2190												
Support and Management	CC/CPFF	Anteon Arlington, VA	1.001	0.256	10/00	0.029						
	CC/CPFF	DTI		0.169	01/01							
	MIPR	GRCI	0.055									
Travel	Various	Various	1.845	0.117	10/00							
Miscellaneous	Various	Various	0.144	0.000	10/00	0.270						
Subtotal Support and Management			3.045	0.542		0.299						
Remarks:												
Test & Evaluation	WR	OPTEVFOR	0.250									
	WR	NSWC Pt. Mugu, CA.	0.567									
	WR	NRL Washington, DC	0.825	0.811								
Subtotal T&E			1.642	0.811								
Total Cost			31.647	3.097		2.775						
Remarks: FOR FY 03 AND OUT - SEE Pes 64756 and 64757.												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, NBA 5	Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		44.409	2.081 *						Cont.	Cont.
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes Engineering Development Models (EDMs) to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) FY01 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$33.875) Continued AIEWS Increment 1 EMD prime contract; build EDMs; Lab/Field Activity support included. - (U) (\$8.173) Continued CAPS software development. - (U) (\$0.615) Continued development of Increment 1 logistics efforts. - (U) (\$1.746) Continued test and evaluation efforts to support engineering, development and operational testing. <p>(U) FY02 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.081) SBIR Phase III follow-on effort. <p>* Note: FY02 funding should be in new PE0604757N/K2309 for AIEWS.</p>										

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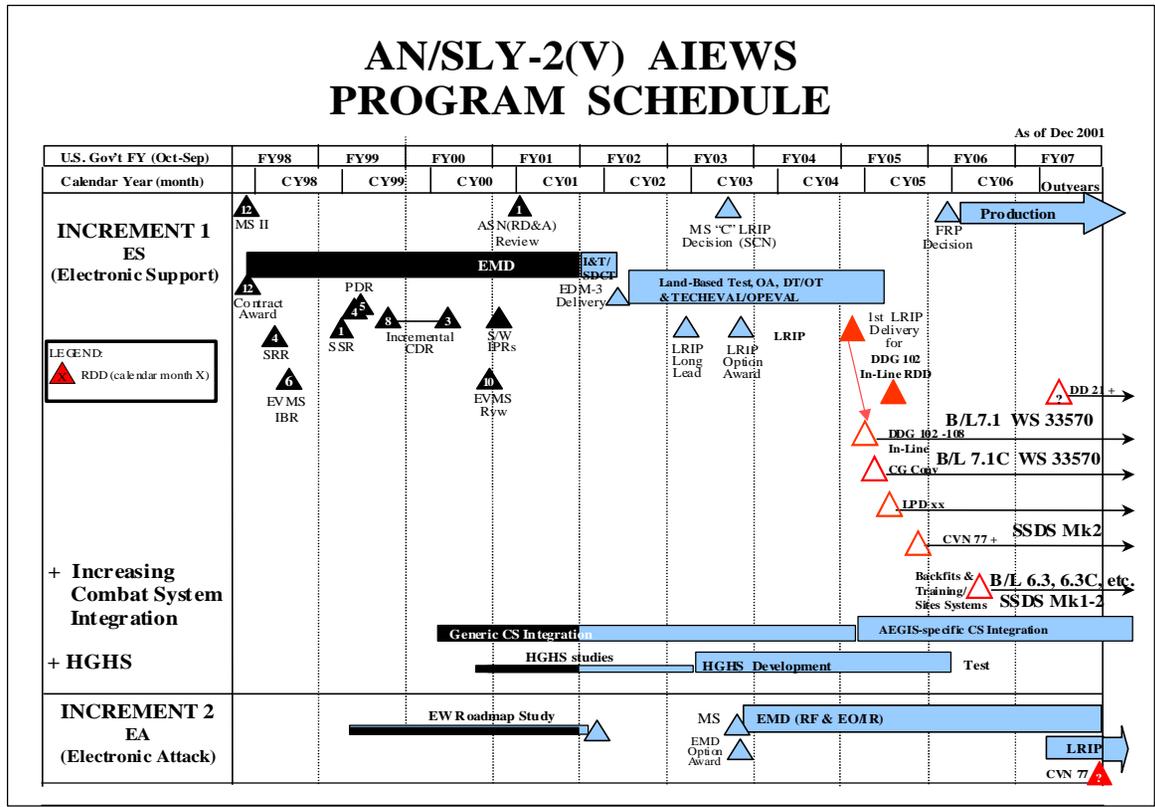
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604755N			PROJECT NAME AND NUMBER Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																		
<p>(U) FY03 PLAN: N/A</p> <p>B. (U) Other program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%;">FY2001</th> <th style="width: 10%;">FY2002</th> <th style="width: 10%;">FY2003</th> <th style="width: 10%;">FY2004</th> <th style="width: 10%;">FY2005</th> <th style="width: 10%;">FY2006</th> <th style="width: 10%;">FY2007</th> <th style="width: 10%;">To Complete</th> <th style="width: 10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 231300</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15.808</td> <td style="text-align: center;">16.136</td> <td style="text-align: center;">19.159</td> <td style="text-align: center;">33.100</td> <td style="text-align: center;">33.304</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> <tr> <td>AIEWS O&MN (14DR0)</td> <td></td> <td></td> <td style="text-align: center;">1.738</td> <td style="text-align: center;">1.721</td> <td style="text-align: center;">1.686</td> <td style="text-align: center;">1.711</td> <td style="text-align: center;">1.755</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> </tbody> </table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures. Options for full contractor support including Direct Vendor Delivery (DVD), Software Support Activity (SSA) and engineering services are also part of the contract. A special receiver capability HGHS will be separately developed and funded beginning in FY 03. HGHS Acquisition Strategy being developed for FY03 start.</p> <p>D. (U) Schedule Profile: See attached schedule.</p>											FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost	OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT	AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT
	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																														
OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT																														
AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT																														

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		February 2002
RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
	Ship Self Defense / 0604755N	Advanced Integrated Electronic Warfare System (AIEWS)/K2309



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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware Development Inc 1	C/CPAF	LMIS Syracuse NY	66.457	27.872	11/00							
HGHS Development	TBD	TBD	-	-	-							
Hardware Development Inc 2	C/CPAF	LMIS Syracuse NY	-	-	-							
Software Development	C/CPAF	DSR Fairfax VA	23.477	6.804	11/00	2.081	02/02				TBD	TBD
Systems Engineering	WR/RCP	NSWCDD	5.070	1.194	10/00							
Combat Sys Modification/Integration	Various	Various	2.114	-	-							
Miscellaneous	Various	Various	6.623	2.762	10/00							
Q-70 Procurement	FFP	LM/Eagan	0.896	0.520	03/01						1.416	N/A
Award Fees	C/CPAF	LM & DSR	3.223	1.369	04/01							
Subtotal Product Development			107.860	40.521		2.081		0.000		CONT	CONT	
Remarks: * Total cost for Increment 1 hardware development identified in PE0604757N/K2309.												
Specialty Engineering												
Integrated Logistics Support												
Training												
Technical Engineering Services	WR/RCP	NRL	3.809	0.751	10/00					CONT	CONT	
Miscellaneous	Various	Various	4.685	1.043	10/00					CONT	CONT	
Subtotal Support			8.494	1.794		0.000		0.000		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 21 of 136 - 27

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, NBA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Test Planning/T&E Events	WR/RCP	NSWCDD	0.400	0.575	10/00					CONT	CONT	
Miscellaneous	Various	Various	0.530	1.171	10/00					CONT	CONT	
Test Events (Aircraft Services	Various	Various										
Subtotal T&E			0.930	1.746		0.000		0.000		CONT	CONT	
Remarks:												
Program Management Support	Various	Various	0.865	0.185						CONT	CONT	
Travel			0.166	0.163								
Subtotal Management			1.031	0.348		0.000		0.000		CONT	CONT	
Remarks:												
Total Cost			118.315	44.409		2.081		0.000		CONT	CONT	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA 5	Ship Self Defense / 0604755N				Infrared Search and Track (IRST) 22649				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	8.072	2.676	9.320	2.469	0.000	0.000	0.000	0.000	75.060
RDT&E Articles Qty									
<p>A. (U) This project provides funding for the Infrared Search & Track (IRST) System. The threat from Sea Skimming Anti-Ship Cruise Missiles (ASCMs) is increasing at a substantial rate and is impacting the Navy's force protection and battle space dominance capability. The IRST program bolsters ships force protection capabilities by providing fully integrated passive detection/declaration of Sea Skimming ASCM threats. Because IRST operates in the infrared portion of the electromagnetic spectrum, it is immune to radar countermeasures and is not affected by atmospheric anomalies such as surface based ducting. In addition, IRST provides extremely accurate and precise elevation data at the horizon that allows immediate determination of hostile intent. IRST can also free up search radar resources by providing horizon search coverage where radar performance is marginal. The IRST provides passive augmentation to complement radar, electronic support measures and visual surveillance systems for air targets. IRST will identify those air targets to the ships' combat system.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: 1. (U) FY 2001 ACCOMPLISHMENTS - (U) (\$1.251) Continued systems engineering; begin systems integration and testing. - (U) (\$1.948) Continued detector design and fabrication; conduct integration test. - (U) (\$.087) Contracted engineering services - (U) (\$1.068) Completed SPS design, fabrication, integration, and acceptance test. - (U) (\$1.319) Continued SPCU design modifications and fabrication. - (U) (\$.907) Continued software modifications. - (U) (\$.251) Continued integrated logistics, reliability, maintainability, and training support. - (U)(\$.919) Independent Systems Engineering. - (U) (\$.322) Program Management/Technical Support.</p>									

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA 5

Ship Self Defense / 0604755N

Infrared Search and Track (IRST) 22649

2. (U) FY 2002 PLAN:

- (U) (\$.629) Continue hardware fabrication, integration, and test
- (U) (\$.302) Continue systems engineering; and begin systems integration and test.
- (U) (\$.774) Continue software modifications.
- (U) (\$.050) Continue integrated logistics, reliability, maintainability, and training support.
- (U) (\$.600) Independent systems engineering
- (U) (\$.087) Contract engineering services.
- (U) (\$.234) Program management/technical support.

3. (U) FY 2003 PLAN:

- (u) (\$5.153) Continue hardware fabrication, integration, and test
- (U) (\$.335) Continue systems engineering, systems integration and test
- (U) (\$.087) Contract engineering services
- (U) (\$1.975) Continue software modifications
- (U) (\$.055) Continue integrated logistics, reliability, maintainability, and training support
- (U) (1.300) Independent systems engineering
- (U) (\$.415) Program management/technical support

B. Other Program Funding Summary: Not Applicable

C. Acquisition Strategy: Not Applicable

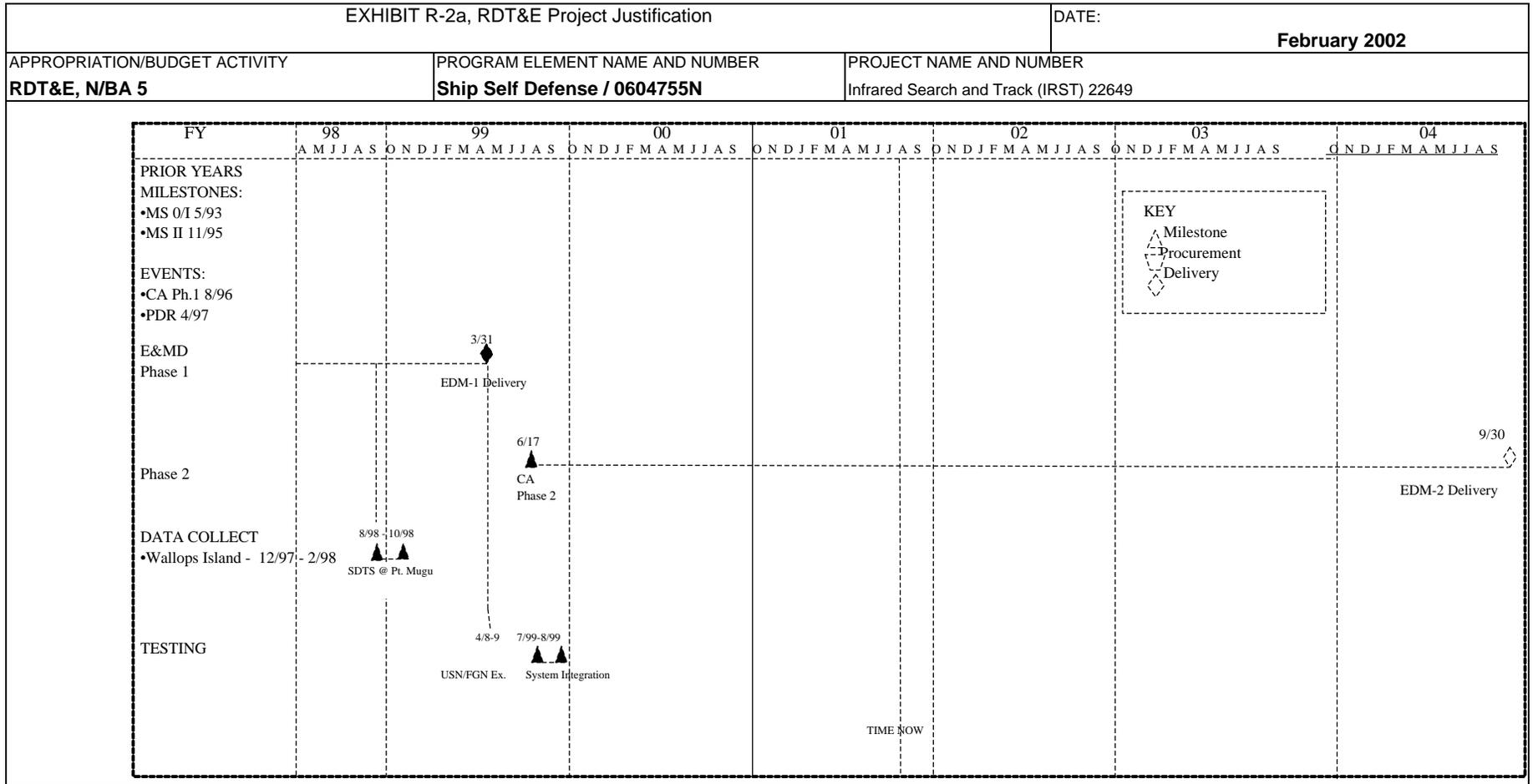
D. Schedule Profile: See attached

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware (Detector)	C/CPAF	LOCKHEED MARTIN	42.682	2.033	11/00	0.629	11/01	5.153	11/01	0.150	50.647	
Ancillary Hardware Development												
Systems Engineering (SE&SI&T)	C/CPAF	LOCKHEED MARTIN		1.251		0.302		0.335		0.758	2.646	
Contract Engineering Services		LOCKHEED MARTIN		0.087		0.087		0.087		0.087	0.348	
Tooling												
SPS	C/CPAF	LOCKHEED MARTIN		1.068							1.068	
Award Fees												
SPCU		LOCKHEED MARTIN		1.357							1.357	
Subtotal Product Development			42.682	5.796		1.018		5.575		0.995	56.066	
Remarks:												
Development Support Equipment												
Software Development		Various	2.668	0.907	Various	0.774	Various	1.975	Various	0.227	6.551	
Training Development												
Integrated Logistics Support			0.679	0.160		0.050		0.055		0.047	0.991	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			3.347	1.067		0.824		2.030		0.274	7.542	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 26 of 136 - 27

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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		NSWC/Lockheed Martin Joint Exercise	2.300		11/00		11/01		11/02	0.000	2.300	
Operational Test & Evaluation		NSWC/Lockheed Martin, Integration Testing	0.875				11/00			0.000	0.875	
Independent Systems Engineering GFE		NSWC/Dahlgren	0.850	0.887		0.600		1.300		1.000	4.637	
Subtotal T&E			4.025	0.887		0.600		1.300		1.000	7.812	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management/Tech Support	Various	Various	2.382	0.299	11/00	0.200	11/01	0.380	11/02	0.175	3.436	
Travel			0.087	0.023		0.034		0.035		0.025	0.204	
											0.000	
Overhead												
Subtotal Management			2.469	0.322		0.234		0.415		0.200	3.640	
Remarks:												
Total Cost			52.523	8.072		2.676		9.320		2.469	75.060	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 -27 of 136 - 27

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					R-1 ITEM NOMENCLATURE SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	*	33.234	19.528	13.596	8.290	9.657	8.961	CONT.	CONT.
5" Rolling Airframe Missile/20167	*	4.766 **	10.750	5.311	2.100	3.654	3.727	CONT.	CONT.
NATO SEASPARROW/ 20173	*	28.468	8.778	8.285	6.190	6.003	5.234	CONT.	CONT.
Quantity of RDT&E,N Articles									
<p>A. Mission Description and Budget Item Justification</p> <p>This program element provides funding for the development of systems that fulfill a portion of the third phase of the ship self defense: Engage. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming ASCMs.</p> <p>(U) ENGAGEMENT: Missile system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (20173) and 5" Rolling Airframe Missile (RAM) (20167). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fuzing/warhead capability improvements.</p> <p>* Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.</p> <p>**FY02 Project Cost should reflect a Congressional Add of \$6.939 for a Total Program control of \$11.705. These funds are currently reflected under Program Element 0604755N, Project Numbers K2190 (\$1.388) and K9081(\$5.551). Funding will be used to commence development and test of the SEARAM ECP to the RAM MK 39 Guided Missile Weapon System.</p>									

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE:																												
	February 2002																												
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE																												
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N																												
<p>B. Program Change Summary:</p> <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">(U) FY 2002 President's Budget:</td> <td style="text-align: center;">*</td> <td style="text-align: right;">33.530</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) Appropriated Value:</td> <td style="text-align: center;">*</td> <td style="text-align: right;">33.530</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) Adjustments to FY 2001/2002</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">Appropriated Value/FY 2002</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">President's Budget:</td> <td style="text-align: center;">*</td> <td style="text-align: right;">-0.296</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(U) FY 2003 Pres Budget Submit:</td> <td style="text-align: center;">*</td> <td style="text-align: right;">33.234</td> <td style="text-align: right;">19.528</td> </tr> </tbody> </table> <p>Funding: FY 02 - Reductions are due to section 8123 management reform initiative adjustment of (-\$.296).</p> <p>Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p> <p>* Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.</p> <p>Project Cost for RAM (20167) should reflect a Congressional Add of \$6.939 for a Total Program control of \$11.705. These funds are currently reflected under Program Element 0604755N, Project Numbers K2190 (\$1.388) and K9081 (\$5.551). Funding will be used to commence development and test of the SEARAM ECP to the RAM MK 39 Guided Missile Weapon System.</p>			FY 2001	FY 2002	FY 2003	(U) FY 2002 President's Budget:	*	33.530		(U) Appropriated Value:	*	33.530		(U) Adjustments to FY 2001/2002				Appropriated Value/FY 2002				President's Budget:	*	-0.296		(U) FY 2003 Pres Budget Submit:	*	33.234	19.528
	FY 2001	FY 2002	FY 2003																										
(U) FY 2002 President's Budget:	*	33.530																											
(U) Appropriated Value:	*	33.530																											
(U) Adjustments to FY 2001/2002																													
Appropriated Value/FY 2002																													
President's Budget:	*	-0.296																											
(U) FY 2003 Pres Budget Submit:	*	33.234	19.528																										

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER					PROJECT NAME AND NUMBER				
RDT&E, NBA-5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N					NATO SEASPARROW/20173				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost	
Project Cost	*	28.468	8.778	8.285	6.190	6.003	5.234	CONT	CONT	
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: This project encompasses two (2) primary efforts to enhance ship self defense:</p> <p>1. (U) EVOLVED SEASPARROW MISSILE (ESSM): A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack).</p> <p>2. (U) NATO SEASPARROW - MK 91 Rearchitecture/SDSMS: The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements. FY 03 provides funding for the RNSSMS Integration with the Ship Self Defense System (SSDS).</p> <p>3. (U) ESSM Launching System (ELS) . FY 03 provides initial funding for development of a solution to protect high value Platforms (CVNs and LHDs) IAW the Navy's Maritime Force Protection (MFP) program for ship's self defense against the future threat of evolving Anti-Ship Cruise Missiles (ASCMs). The Navy's MFP plan calls for these platforms to carry ESSM to provide the requires Probability of Raid Annihilation (PRA). The ESSM Launching System provides a light weight, low cost, ultra high reliability fixed launcher in lieu of the current, 1960 technology, heavy rotating launcher. In conjunction with ESSM, the ESSM launching System will meet performance requirements for all cited ship classes through the mid-term; and, in conjunction with ESSM (P3I), will meet PRA requirements into the far term scenario as defined in the capstone requirements and the 1999 Report to Congress.</p> <p>* Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.</p>										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N	PROJECT NAME AND NUMBER NATO SEASPARROW/20173
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2002 PLAN (U) ESSM: (U) (\$27.392) Continue AEGIS S Band development. Conduct U.S. Unique DT-IIC/OT-IIC firings on SDTS. Conduct TECHEVAL/OPEVAL (DT-IIE/OT-IID) on AEGIS platforms. Complete the cooperative and sole ESSM EMD efforts (U) NATO SEASPARROW: (U) (\$1.076) Complete development of computer program suite for the NSSMS MK 57 Mod 7 (ReArchitecture) for CVNs with SSDS Mk 2 Mod 1. Support Integration testing with SSDS Mk 2 Mod 1 at Wallops Island. Enter CSIT for CVN 76 with SSDS Mk 2 Mod 0 at ICSTF. Address all deficiencies accruing from either Wallops Island or ICSTF testing.</p> <p>2. (U) FY 2003 PLAN (U) ESSM: (U) (\$2.778) Correct engineering deficiencies identified as a result of the TECHEVAL/OPEVAL firings. Provide engineering in support of Post firing analysis. (U) NATO SEASPARROW: (U) (\$3.000) SSDS Post Integration: Building upon the current NSSMS MK 57 Mod 4 - 9 upgrade (Re-architected NSSMS) that provided an initial capability with SSDS MK 2 in support of the Maritime Force Protection (MFP) program, evolve the fire control system component to implement the additional organic capabilities required by the MFP Performance & Compatibility Requirements (P&CR) for CVNs. This effort will maintain compatibility with RNSSMS and evolving Next Generation Ship Defense post SSDS Mk 2, fully exploit RNSSMS performance capabilities, and develop RNSSMS capabilities consistent with the full-approved Integration Specifications. It will also support the evolutionary weapons and control system development to counter future evolving threats. (U) (\$3.000) ELS Development:Utilizing existing technology and the launching system procured by U.S. allied Navies for future ESSM employment, develop a program for the adaptation and U.S. certification of the launching system and make available for U.S. Navy deployment. Provide for the development of a fleet deployable ESSM Launching System (ELS) to accommodate Evolved SEASPARROW Missiles which will provide full dimensional protection against the evolutionary threat of ASCMs on non-AEGIS platforms.</p>		

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N BA-5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			NATO SEASPARROW/20173						
B. Other Program Funding Summary										
			<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To Complete	Total Cost
WPN BA-2	-	-								
Other Missiles, Evolved SEASPARROW (ESSM) (230700)			\$41.665	\$129.550	\$150.697	\$260.483	\$282.944	\$198.077	CONT	CONT
OPN BA-4 NATO SEASPARROW (523700, 523705)			\$10.575	\$41.408	\$21.207	\$26.117	\$19.638	\$26.348	CONT	CONT
Related RDT&E: PE 0603609N (Conventional Munitions) PE 0604307N (AEGIS Combat System Engineering) PE 0604755N (K2178 Quick Reaction Combat Capability (QRCC))										
C. Acquisition Strategy: ESSM is a directed sole source contract to Raytheon Missile Systems Company for LRIP, and upon successful completion of TECHEVAL/OPEVAL in FY 02, entering into Full Rate Production FY 03. Multi-year full rate production is the preferred approach for the NATO SEASPARROW Consortium.										
D. Schedule Profile: The schedule has been delayed as a result of the radome investigation and problems with Rear Receiver Build in Test Software.										
			<u>FY 2002</u>	<u>FY 2003</u>						
Program:				4Q MS III						
Engineering:										
T&E			AEGIS-SDTS 4Q DT-IIC/OT-IIC	AEGIS 3Q DT-IIE/OT-IID						
Contracts:			2Q LRIP CA OPTION 2	4Q FRP CA						

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N BA-5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				NATO SEASPARROW/20173					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location				FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Developme	LC/CPAF	RAYTHEON				9.428	10/01	0.490	10/02		141.787	141.787
		TDW									0.000	0.000
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP									0.000	0.000
Systems Engineering	VARIOUS	VARIOUS				0.959	10/01	0.100			NA	NA
ESSM Launching System	LC/CPAF	RAYTHEON						2.200	10/02	CONT	CONT	
NATO-Primary Hdwe Dev		RAYTHEON				1.026	11/01			CONT	CONT	
SSDS Integration		RAYTHEON						2.165	10/02	CONT	CONT	
Subtotal Product Development						11.413		4.955		CONT	CONT	CONT
Remarks:												
ESSM												
Integrated Logistics Support	WR	NSWC PHD				0.500	10/01				0.500	
Engr Support	WR	VARIOUS				0.816	10/01	0.300	10/02		1.116	
ESSM Launching System	WR	VARIOUS										
Integrated Logistics Support	WR	NSWC PHD						0.300	10/02			
Engr Support								0.300	10/02			
NATO-MK 91/SDSMS												
ENGR SUPPORT	WR	VARIOUS						0.300	10/02	CONT	CONT	
Integrated Logistics Support	WR	NSWC PHD						0.181	10/02			
Subtotal Support						1.316		1.381		CONT	CONT	
Remarks:												

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N BA-5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				NATO SEASPARROW/20173					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location				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	WR	NAWC CL				9.353	10/01				12.374	
SDTS/DT OT 11C	WR	PT Mugu									0.000	
OPEVAL/TECHEVAL	WR	VARIOUS(Corona, APL,Dalhgren,NSWC PHD)				5.033	10/01	0.745	10/02		5.778	
Developmental Test & Evaluation	WR	APL						0.295				
Developmental Test & Evaluation	WR	DALHGREN						0.150				
Subtotal T&E						14.386		1.190			18.152	
Remarks:												
ESSM-ENGR SPT	VARIOUS	VARIOUS				0.268	VARIOUS	0.165	VARIOUS			
ESSM-PM SPT	VARIOUS	VARIOUS										
ESSM-LABOR	PD/WR					0.845	VARIOUS	0.845	VARIOUS		CONT	
ESSM - TRAVEL	PD/WR					0.185	VARIOUS	0.187	VARIOUS		CONT	
ESSM- MISC	VARIOUS	VARIOUS				0.005	VARIOUS	0.005	VARIOUS			
NATO TRAVEL/MISC	VARIOUS	VARIOUS				0.050	VARIOUS	0.050	VARIOUS	CONT	CONT	
Subtotal Management						1.353		1.252		CONT	CONT	
Remarks:												
Total Cost						28.468		8.778		CONT	CONT	
Remarks:												
The Firings of the ESSM aboard the Self Defense Test ship in FY 02 are critical for the qualification and acceptance testing in a shipboard environment. The TECHEVAL/OPEVAL will provide the fist guided intercept from a AEGIS Platform to Test Out the Weapon System and Obtain Milestone III for the ESSM Full Rate Production.												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUM				
RDT&E, N/BA5	SHIP SELF DEFENSE 0604756N				5" ROLLING AIRFRAME MISSILE/20167				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	*	4.766 **	10.750	5.311	2.100	3.654	3.727	Continuing	Continuing
RDT&E Articles Qty									

A. Mission Description and Budget Item Justification: The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio Frequency/Infrared 5" Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuze. The RAM Block 1 MOD 3 upgrade program is a joint requirement of the US and Germany agreed to in a Memorandum of Understanding (MOU) signed by both parties. This effort will provide an additional capability against helicopters, aircraft and surface craft. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence. SSDS/RAM Block 1 MOD 3 Integration and Testing will continue through FY 2007.

1. (U) FY 2002 PLAN:
 - (U) (\$3.958) SSDS MK 2/RAM Blk 1 MOD 3 Integration.
 - (U) (\$0.808) Continue RAM Blk 1 MOD 3 Development (Complete CTE Support and Data Analysis, Evaluation of Test Firings, Optimization of IRSP Algorithms).
 -

2. (U) FY 2003 PLAN:
 - (U) (\$7.317) SSDS MK 2/RAM Blk 1 MOD 3 Integration.
 - (U) (\$2.966) RAM Blk 1 MOD 3 Flight Test/Data Analysis/IRSP Optimization
 - (U) (\$0.467) Autopilot Flight Tests

*** Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.**

**** FY02 Project Cost should reflect a Congressional Add of \$6.939 for a Total Program control of \$11.705. These funds are currently reflected under Program Element 0604755N, Project Numbers K2190 (\$1.388) and K9081 (\$5.551). Funding will be used to commence development and test of the SEARAM ECP to the RAM MK 39 Guided Missile Weapon System.**

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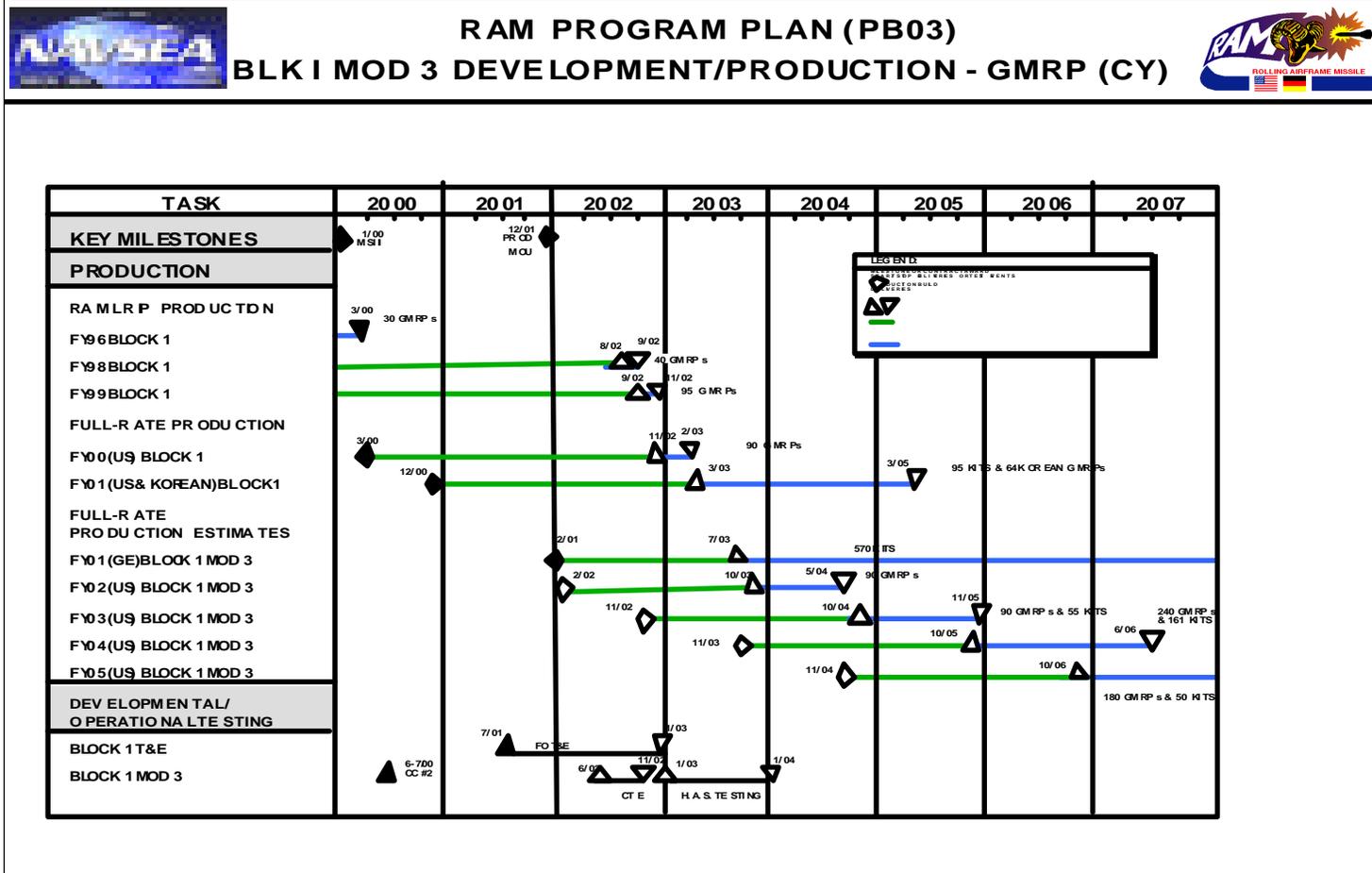
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604756N			PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167				
B. Other Program Funding Summary									
	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	To Complete	Total Cost
OPN LINE 523800 (RAM)	\$35.343	\$31.556	\$23.893	\$32.464	\$25.651	\$24.172	\$12.963	CONT.	CONT.
WPN LINE 224200 (RAM)	\$22.741	\$42.663	\$58.379	\$130.427	\$89.097	\$304.609	\$225.692	CONT.	CONT.
C. Acquisition Strategy: SSDS/RAM Block 1 MOD 3 Integration and Testing FY 2000 - FY 2007.									
D. Schedule Profile: See attached.									
E. Program Change Summary:									
<p>FY 02 Estimated decrease in SSDS/RAM Block 1 MOD 3 Integration. This budget does not reflect \$6.939 Congressional add currently under Program Element N0604755N, Project Numbers K2190 (\$1.388) and K9081 (\$5.551).</p> <p>FY 03 Reduction due to anticipated decreased costs of SSDS/RAM Block 1 MOD 3 Integration</p>									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604756N	PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167
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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA5			SHIP SELF DEFENSE 0604756N				5" ROLLING AIRFRAME MISSILE/20167					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location				FY 02 Cost	FY 02 * Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware/Softwr Developmt	SS/CPFF	Raytheon Co., Tucson, AZ				0.000		0.000		CONT.	CONT.	CONT.
SSDS/Blk 1 MOD 3 Integration Support	SS/CPFF	Raytheon Co, San Diego, CA				3.608	02/02	5.517	11/02	CONT.	CONT.	CONT.
SSDS MK 2/Blk 1 MOD 3 Integration Support		JHU/APL, Laurel, MD				0.220		0.627		CONT.	CONT.	CONT.
RAM Blk 1 MOD 3 Engineering		NAWC/China Lake				0.000		0.000		CONT.	CONT.	CONT.
SSDS MK 2/Blk 1 MOD 3 Integration Support		NSWC/PHD				0.000		0.658		CONT.	CONT.	CONT.
Blk 1 MOD 3 IR Support		NRL				0.100		0.000		CONT.	CONT.	CONT.
Prog./Tech Mgt. - Blk 1 MOD 3 Sys. Safety		NSWC/DD				0.230		0.515		CONT.	CONT.	CONT.
Miscellaneous		Various				0.000		0.000		CONT.	CONT.	CONT.
Subtotal Product Development						4.158		7.317		CONT.	CONT.	CONT.
Remarks: *Primary Hardware/Software Development in FY02 should reflect a Congressional Add of \$6.939 for Raytheon Co., Tucson, AZ. These funds are currently reflected under Program Element 0604755N, Project Numbers K2190 (\$1.388) and K9081 (\$5.551). Subtotal Product Development would equal \$11.097.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support						0.000		0.000		0.000	0.000	0.000
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					R-1 ITEM NOMENCLATURE Ship Self Defense (Engage: Soft Kill)/0604757N				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	0.000	41.301	28.064	35.517	35.002	33.566	34.231	CONT.	CONT.
Shipboard EW Imp / K0954	0.000	2.288	1.194	0.511	0.409	0.312	0.316	CONT.	CONT.
NULKA/K2441/2190	*	0.000	0.526	1.015	1.083	1.080	1.094	CONT.	CONT.
AIEWS / K2309/K2792/K2793	*	0.000	38.487	25.855	33.923	33.513	32.160	CONT.	CONT.
Quantity of RDT&E Articles									
<p>A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Engage: Soft Kill Electronic Warfare (EW) aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets.</p> <p>* See PE 0604755N</p>									

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE Ship Self Defense/0604757N	
<p>These SSD projects address and coordinate the detect and engage functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Sensor improvements are addressed through the Shipboard EW Improvements (K0954) and Advanced Integrated Electronic Warfare System (AIEWS) (K2309) projects. These improvements to both active and passive detection capabilities are complementary to the ship signature reduction technology also being pursued through Shipboard EW (K0954).</p> <p>(U) ENGAGEMENT: The offboard Active Decoy (NULKA, K2190) is a joint cooperative program between the United States and Australia to develop and engage an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. The Decoy is designed to counter a wide variety of present and future radar guided Anti-Ship Missile (ASM) threats by radiating a large radar cross section signal while flying trajectory.</p>		

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5		Ship Self Defense/0604757N	
Program Change Summary:	FY 2001	FY 2002	FY 2003
FY 2002 President's Budget:		41.670	
Appropriated Value:		41.670	
Adjustments to FY 2001/2002 President's Budget:		-0.369	
FY 2003 Pres Budget Submit	0.000	41.301	28.064
Funding:			
FY01: See PE 64755			
FY02: Reduction of (-\$.369) for Section 8123.			
Technical: Not Applicable.			
R-1 SHOPPING LIST - Item No. 138 - 1 of 138 - 16			

R-1 SHOPPING LIST - Item No. 138 - 3 of 138 - 16

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N	Ship Self Defense 0604757N			Shipboard EW Improvements K0954					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	2.288	1.194	0.511	0.409	0.312	0.316	Cont.	Cont
RDT&E Articles Qty									
PROGRAM DESCRIPTION/JUSTIFICATION:									
<p>The AN/SLQ-32(V) provides a family of modular shipborne electronic equipment which is installed in most combatants, CV/CVN, amphib and auxiliaries in the surface Navy. The systems, which consists of five configurations, performs the mission of early detection, analyses, threat warning, and protection from anti-ship missiles. The (V)1 and (V)2 are computer controlled Electronic Support (ES) Systems that detect , sort, classify, identify and continuously display signals within frequency ranges. The (V)3 and (V)4 provide the capabilities of the passive system plus an integrated Active Electronic Attack (EA) response for all signals classified as a threat. The (V)5 provides for an EA capability on smaller class ships.</p> <p>CINCLANTFLT/CINCPACFLT msg R091300Z Jul 99 identified the AN/SLQ-032(V) system as experiencing extensive operational and readiness deficiencies. JFCOM, PACOM, and EUCOM have all submitted Component Commanders Issue Papers (CCIP) stating the need to keep the AN/SLQ-32 viable. Development of targeted improvements, ES/EA enhancements, and techniques for new threats are all necessary to ensure future mission tactical suitability and viability until it is replaced by AN/SLY-2 in approximately FY 2020.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) FY01 ACCOMPLISHMENTS: NOT APPLICABLE</p> <p>(U) FY02 PLAN: (\$2.288) Initiate development of hardware and software to increase AN/SLQ-32(V) Anti-Ship Missile Defense (ASMD) effectiveness. The updates to hardware and software are needed to keep pace with Anti-Ship Missiles (ASMS) as they have evolved into more complex types of emitters. The environment in which the AN/SLQ-32(V) operates has become increasingly dense. The AN/SLQ-32(V) updates will also aid in handling the significant increase in density of emitters. Efforts will also enhance the AN/SLQ-32(V) functionality, which will result in increased capabilities to properly identify ASMD threats.</p>									

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604757N	PROJECT NAME AND NUMBER Shipboard EW Improvements K0954

U) FY03 PLAN: (\$1.194) Continue development of hardware and software to increase AN/SLQ-32(V) ASMD effectiveness through enhancement of Electronic Attack Attack capabilities. This will result in increased capabilities to counter ASMD threats through jamming, deception, and tactical integration and cooperative engagement countermeasures.

	FY2002	FY2003	FY2004	FY2005	FY 2006	FY 2007	To Complete	Total Cost
OPN BA-2 AN/SLQ-32(V) (231200/231205)	1.954	1.856	4.100	4.062	4.146	4.249	cont	cont
O&MN, EW, AN/SLQ-32 (12CR0)	1.364	1.406	1.477	1.553	1.580	1.620	cont	cont
O&MN,ASMD, ANSLQ-32 (1D4D)	7.349	7.403	8.129	8.319	7.309	7.200	cont	cont

C. Acquisition Strategy: Not Applicable

D. Schedule Profile: Not Applicable

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N			Ship Self Defense 0604757N			Shipboard EW Improvements, K0954							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	RC/FFP	TBD	0.000	0.000		1.968	02/02	1.014	11/02	CONT	CONT		
Ancillary Hardware Development		Various	151.420								151.420		
Systems Engineering											0.000		
Licenses											0.000		
Tooling											0.000		
GFE											0.000		
Award Fees											0.000		
Subtotal Product Development			151.420	0.000		1.968		1.014		Cont	Cont		
Remarks:													
Development Support Equipment											0.000		
Software Development											0.000		
Training Development											0.000		
Integrated Logistics Support											0.000		
Configuration Management											0.000		
Technical Data		R-1 SHOPPING LIST - Item No. 138 - 1 of 138 - 16										0.000	
GFE											0.000		
Subtotal Support			0.000	0.000		0.000				0.000	0.000		
Remarks:													

R-1 SHOPPING LIST - Item No. 138 - 6 of 138 - 16

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Ship Self Defense 0604757N			Shipboard EW Improvements, K0954						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various	8.563								8.563	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			8.563	0.000		0.000		0.000			8.563	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NSWC/CD & NRL				0.220		0.144		CONT	CONT	
Program Management Support	WR	NSWC/CD				0.100		0.036		CONT	CONT	
Program Management Support		Various	22.045								22.045	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			22.045	0.000		0.320		0.180		0.000	Cont	
Remarks:												
Total Cost			182.028	0.000		2.288		1.194		CONT	CONT	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA5	SHIP SELF DEFENSE 0604757N				NULKA DECOY/K2190/K2441				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.526	1.015	1.083	1.080	1.094	1.112	CONTINUING	CONTINUING
RDT&E Articles Qty									
<p>A. (U) Mission Description and Budget Item Justification The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. (U) FY 2001 Accomplishments: N/A 2. (U) FY 2002 Plan: <ul style="list-style-type: none"> - (U) (\$0.526) Develop radar cued decoy launch capability. Start development of anti-tampering system for payload. 3. (U) FY 2003 Plan: <ul style="list-style-type: none"> - (U) (\$1.015) Continue development of anti-tampering system for payload. <p>NOTE: FY02 Plus-Up is reflected in PE - 0604755N.</p>									

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA5

SHIP SELF DEFENSE 0604757N

NULKA Decoy/K2190/K2441

B. (U) Other Program Funding Summary

OPN Line 553000/553005

O&M,N Line 1D4D 14DR0

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Complete</u>	Total <u>Cost</u>
Anti-Ship Missile Decoy System	36.872	27.269	27.976	35.888	43.283	44.178	40.674	CONT.	CONT.
NULKA O&M,N	4.300	2.478	2.085	2.798	3.321	3.375	3.463	CONT.	CONT.

C. (U) Acquisition Strategy: N/A

D. (U) Schedule Profile: See Attached.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

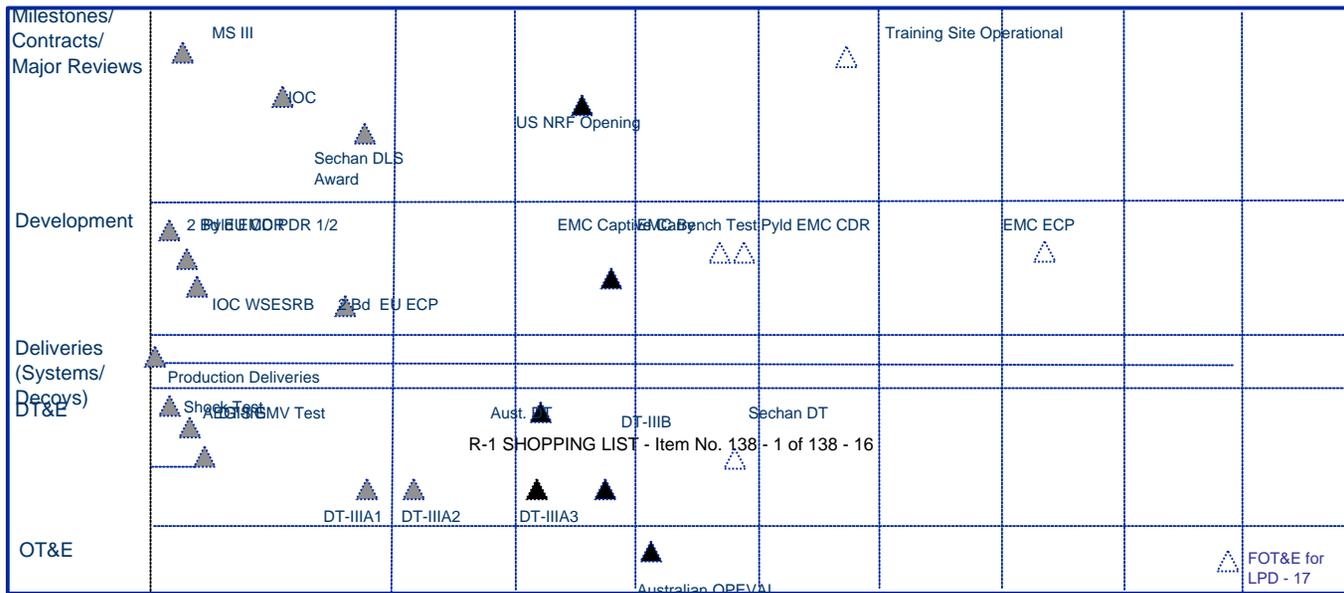
PROJECT NAME AND NUMBER

RDT&E, N/BA5

SHIP SELF DEFENSE 0604757N

NULKA Decoy/K2190/K2441

FY 99 - FY 00	FY 01	FY 02	FY 03	FY 04
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4



CY 01	CY 02	CY 03	CY 04
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

AUS FY 01 AUS FY 02 AUS FY 03 AUS FY 04

10 Jan 02

R-1 SHOPPING LIST - Item No. 138 - 10 of 138 - 16

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CLASSIFICATION: **UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604757N			NULKA Decoy/K2190/K2441						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Product Development	WR	NSWC Crane, IN						0.192	10/02	CONT.	CONT.	N/A
	WR	NSWC Dahlgren, VA				0.130	10/01	0.193	10/02	CONT.	CONT.	N/A
	WR	NSWC Port Hueneme, CA					01/02					
	WR	NRL Washington, DC				0.190	01/02	0.253	10/02	CONT.	CONT.	N/A
	SS/CPFF	Sippican Boston, MA					01/02				0.000	4.292
	SS/CPFF	BAeA, Australia					01/02				0.000	5.500
Subtotal Product Development			0.000	0.000		0.320		0.638		CONT.	CONT.	CONT.
Remarks:												
Support and Management	CC/CPFF	Anteon Arlington, VA				0.047	11/01	0.195	11/02	CONT.	CONT.	
Travel	Various	Various				0.079	10/01	0.090	10/02	CONT.	CONT.	
Miscellaneous	Various	Various				0.080	10/01	0.092	10/02	CONT.	CONT.	
Subtotal Support and Management			0.000	0.000		0.206		0.377		CONT.	CONT.	
Remarks:												
Test & Evaluation	WR	OPTEVFOR									0.000	
	WR	NSWC Pt. Mugu, CA.									0.000	
	WR	NRL Washington, DC									0.000	
Subtotal T&E			0.000	0.000							0.000	
R-1 SHOPPING LIST - Item No. 138 - 1 of 138 - 16												
Total Cost			0.000	0.000		0.526				CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 138 - 11 of 138- 16

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, NBA 5	Ship Self Defense / 0604757N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	38.487	25.855	33.923	33.513	32.160	32.803	Cont.	Cont.
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes Engineering Development Models (EDMs) to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) FY01 ACCOMPLISHMENTS: N/A</p> <p>(U) FY02 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$27.987) Continue AIEWS Increment 1 EMD prime contract; complete EDM; Lab/Field Activity support included. - (U) (\$4.750) Continue Control and Processing System (CAPS) software development. - (U) (\$.965) Continue development of Increment 1 logistics efforts. - (U) (\$4.785) Continue test and evaluation efforts to support engineering, development and operational testing of Increment 1; perform Operational Assessment (OA) & transition to Low Rate Initial Production (LRIP). 										

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604757N			PROJECT NAME AND NUMBER Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																		
<p>(U) FY03 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$12.835) Complete Increment 1 EMD; transition to production & evolutionary fulfillment of related AIEWS Operational Requirements Document (ORD) requirements; Lab/Field Activity support included. - (U) (\$1.823) Complete CAPS software development; support integrated HW/SW testing. - (U) (\$.576) Continue Increment 1 logistics efforts. - (U) (\$5.962) Continue test and evaluation efforts to support engineering, development and operational testing of Increment 1 through OPEVAL. - (U) (\$2.132) Initiate High Gain/High Sensitivity (HGHS) development effort. - (U) (\$2.527) Initiate Increment 2 EMD effort. <p>B. (U) Other program Funding Summary</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;">FY2001</th> <th style="width:10%;">FY2002</th> <th style="width:10%;">FY2003</th> <th style="width:10%;">FY2004</th> <th style="width:10%;">FY2005</th> <th style="width:10%;">FY2006</th> <th style="width:10%;">FY2007</th> <th style="width:10%;">To Complete</th> <th style="width:10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 231300</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15.808</td> <td style="text-align: center;">16.136</td> <td style="text-align: center;">19.159</td> <td style="text-align: center;">33.100</td> <td style="text-align: center;">33.304</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> <tr> <td>AIEWS O&MN (14DR0)</td> <td></td> <td></td> <td style="text-align: center;">1.738</td> <td style="text-align: center;">1.721</td> <td style="text-align: center;">1.686</td> <td style="text-align: center;">1.711</td> <td style="text-align: center;">1.755</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> </tbody> </table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures. Options for full contractor support including Direct Vendor Delivery (DVD), Software Support Activity (SSA) and engineering services are also part of the contract. A special receiver capability HGHS will be separately developed and funded beginning in FY 03. HGHS Acquisition Strategy being developed for FY03 start.</p> <p>D. (U) Schedule Profile: See attached schedule.</p>											FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost	OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT	AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT
	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																														
OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT																														
AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT																														

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

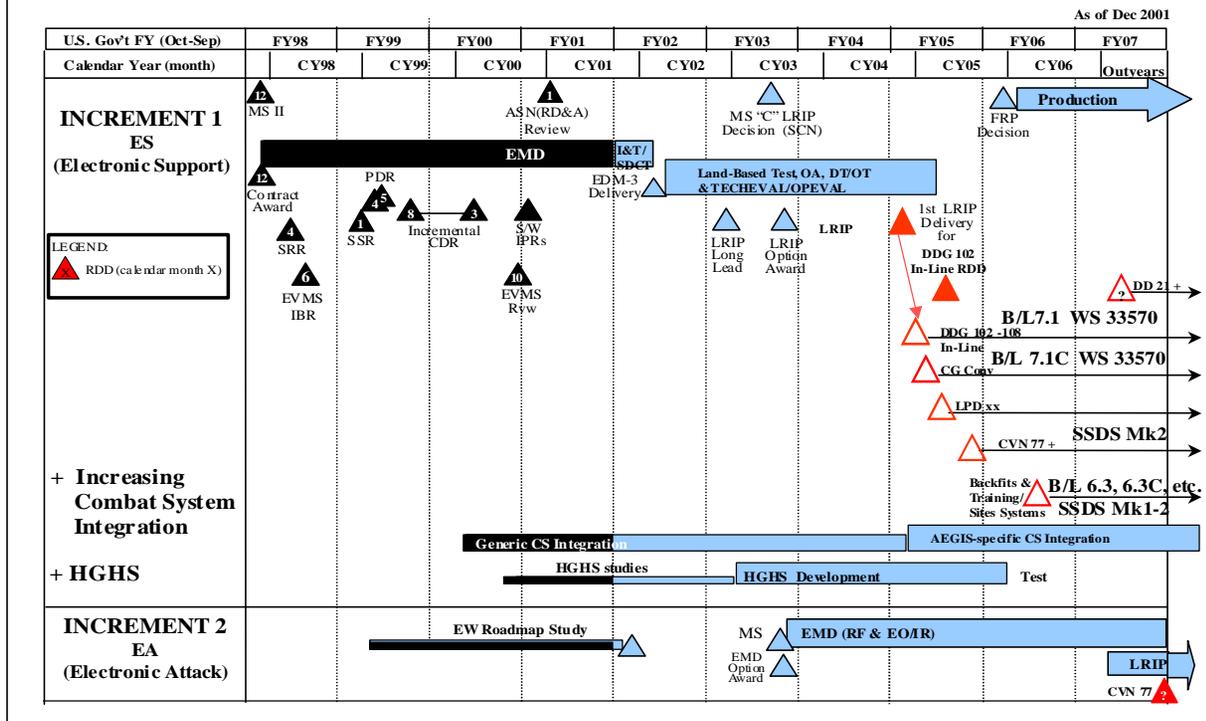
PROJECT NAME AND NUMBER

RDT&E, N/BA 5

Ship Self Defense / 0604757N

Advanced Integrated Electronic Warfare System (AIEWS)/K2309

AN/SLY-2(V) AIEWS PROGRAM SCHEDULE



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Exhibit R-3 Cost Analysis (page 1)									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Hardware Development Inc 1	C/CPAF	LMIS Syracuse NY				22.960	12/01	5.938	12/02	3.523	TBD	TBD
HGHS Development	TBD	TBD				-	-	2.132	12/02	TBD	TBD	TBD
Hardware Development Inc 2	C/CPAF	LMIS Syracuse NY				-	-	2.527	05/03	TBD	TBD	TBD
Software Development	C/CPAF	DSR Fairfax VA				3.600	12/01	1.573	12/02	0.000	TBD	TBD
Systems Engineering	WR/RCP	NSWCDD				1.014	11/01	1.350	11/02	CONT	CONT	
Combat Sys Modification/Integration	Various	Various				0.274	03/02	-	-	CONT	CONT	
Miscellaneous	Various	Various				1.850	11/01	2.315	11/02	CONT	CONT	
Q-70 Procurement	FFP	LM/Eagan					N/A	-	-	0.000	0.000	N/A
Award Fees	C/CPAF	LM & DSR				1.172	08/02	0.716	06/03	1.829	CONT	N/A
Subtotal Product Development			0.000	0.000		30.870		16.551		CONT	CONT	
Remarks: * Total cost for Increment 1 hardware development includes basic EMD contract EAC plus options in progress.												
Specialty Engineering												
Integrated Logistics Support												
Training		R-1 SHOPPING LIST - Item No. 138 - 1 of 138 - 16										
Technical Engineering Services	WR/RCP	NRL				0.878				CONT	CONT	
Miscellaneous	Various	Various				1.638				CONT	CONT	
Subtotal Support			0.000	0.000		2.516		3.028		CONT	CONT	
Remarks:												

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604757N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Test Planning/T&E Events	WR/RCP	NSWCDD				1.184	01/02	0.662	11/02	CONT	CONT	
Miscellaneous	Various	Various				2.555	01/02	1.466	11/02	CONT	CONT	
Test Events (Aircraft Services)	Various	Various				1.046	01/02	2.500	11/02			
								1.334				
Subtotal T&E			0.000	0.000		4.785		5.962		CONT	CONT	
Remarks:												
Program Management Support	Various	Various				0.155	10/01	0.150	10/02	CONT	CONT	
Travel						0.161		0.164				
Subtotal Management			0.000	0.000		0.316		0.314		CONT	CONT	
Remarks:												
Total Cost			0.000	0.000		38.487		25.855		CONT	CONT	
Remarks:												

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0933 Medical / Dental Equipment Development									
	26,189	9,372	7,154	7,270	7,461	7,609	7,760		
M2650 Voice Instructional Devices (VID)									
	0	5,947	0	0	0	0	0		
M2896 Military Dental Research									
	0	2,775	0	0	0	0	0		
M2897 High Resolution Digital Mammography									
	0	1,487	0	0	0	0	0		
M2795 Coastal Cancer Control (MUSC)									
	0	3,469	0	0	0	0	0		
Total	26,189	23,050	7,154	7,270	7,461	7,609	7,760		

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0933 Medical / Dental Equipment Development	26,189	9,372	7,154	7,270	7,461	7,609	7,760		

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,565) DNA VACCINE TECHNOLOGY: Completed FDA clinical trial of 5 plasmid DNA vaccine in humans; completed manufacture of new 9 plasmid (not 15 plasmid) vaccine; initiated studies of DNA vaccines in neonatal animals to prepare for efficacy studies in humans.
- (U) (\$152) FLIGHT OPERATIONS NOISE MITIGATION TEST-BED: Completed tests with noise mitigation materials on aircraft carriers during at-sea flight operations. Final report due in December 2001.
- (U) (\$1,857) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Completed evaluation of system on V-22 simulator; conducted successful flight demonstration using USAF Special Operations aircraft; initiated work on pitch/roll algorithms; produced initial helicopter system for test and procurement; purchased additional suits and constructed a laboratory-based system and one additional flight system; initiated unmanned aerial vehicle demonstrations and evaluations and continued fixed wing demonstrations and evaluations of flight system.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

- (U) (\$230) VIRTUAL FIT CHECK SYSTEM: Completed interface between the digital anthropometric video-imaging device and the automated anthropometric evaluation program at Naval Air Warfare Center to form the Virtual Fit Check System; conducted recruitment of candidates for the study and began collection of data. Minor technical difficulties have delayed completion of this effort until FY 2002.
- (U) (\$165) CERTIFICATION OF MEDICAL ANCILLARY EQUIPMENT FOR USE IN HYPERBARIC CHAMBERS: Initiated evaluation of seven ventilators, three intravenous infusion pumps, and one cardiac monitor for use in Navy hyperbaric chambers. Of these, two ventilators, one IV infusion pump and the cardiac monitor were determined to be safe for hyperbaric use; continuing safety evaluation of other equipment; equipment determined to be safe is being assessed for accuracy during hyperbaric exposure.
- (U) (\$278) EVALUATION OF FIELD-BASED PROCEDURES FOR SCREENING DIVERS' AIR: All equipment for testing has been received; initiated and completed laboratory evaluation to ensure that all items meet the required performance specifications prior to initiation of the field test; two NAVSEA test sites identified where field tests will be performed; actual field testing will begin in the third quarter of FY 2001.
- (U) (\$400) RESCUE OF MILITARY CASUALTIES FOLLOWING LETHAL BONE MARROW INJURY: Completed first phase of FDA review to use specific cell line in a Phase I study of patients undergoing radiation therapy for breast cancer; initiated and completed additional safety and procedural requirements for FDA second phase review; initiated FDA- required pre-clinical safety studies in large animals; initiated growth of pre-clinical stem cell expansion cultures. Discontinued due to failure to obtain approval by FDA to perform clinical trials.
- (U) (\$2,979) BONE MARROW TRANSPLANTATION TECHNOLOGY: Initiate Phase I and Phase II Clinical Trials of a proprietary compound that is used to inhibit the replication of T cells in donated bone marrow, while preserving other immunologic functions. Previously supported by an FY00 add in PE 0603706N.
- (U) (\$3,972) DENTAL RESEARCH: Initiate studies to address dental readiness and preparedness issues prior to deployment as well as injuries and oral diseases during combat redeployment operations. Previously supported by an FY00 add in PE 0603706N.
- (U) (\$1,489) MOBILE INTEGRATED DIAGNOSTIC AND DATA ANALYSIS SYSTEM: Initiate studies to develop a light-weight, portable system of linked sensors to monitor tympanic membrane temperature, electrocardiogram, and pulse and respiratory rates in victims of trauma.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

- (U) (\$1,986) HIGH RESOLUTION DIGITAL MAMMOGRAPHY: Initiate studies to develop second generation enhanced resolution digital mammography. Previously supported by an FY00 add in the Defense Health Program (P8).
- (U) (5, 958) VOICE INTERACTIVE DEVICE: Continue studies to modify, demonstrate and validate the Naval voice interactive device as a tool for medical personnel aboard ships or in the field to facilitate the collection, processing, storing, and forwarding of critical medical data for treating combat casualties.
- (U) (\$993) SMART AORTIC ARCH CATHETER: Initiate studies to develop a sensor-equipped catheter for emergency assisted placement in the aortic arch via a parasternal approach. The catheter, once properly placed, will deliver cold solutions to the brain, heart and spinal cord for protection of those tissues during periods of low or no blood flow.
- (U) (4,965) COASTAL CANCER CONTROL: Continue studies to extend the Coastal Cancer Control activities centered on primary and secondary prevention and focusing on underserved populations as well as active duty military personnel and their beneficiaries. The program will include remote diagnosis, outreach telemedicine, and epidemiology and risk factor identification as related to cancer control.

Studies supported this year include incidence and prevalence of cancer in South Carolina and in the DoD population, occupational studies of cancer, risk factor identification, patterns of use and delivery of health care, epidemiologic and statistical analyses, and geographic information systems.

2. (U) FY 2002 PLAN:

- (U) (\$1,650) DNA VACCINE TECHNOLOGY: Complete studies of 9 plasmid (not 15 plasmid) vaccine in healthy adult subjects; initiate clinical trials of new formulation of DNA vaccines designed to improve antibody responses; complete pre-clinical trial in neonatal animals.
- (U) (\$1,700) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Complete development of additional lab and flight systems; complete unmanned aerial vehicle and fixed demonstrations and evaluations; complete rotary and fixed wing suits and pitch/roll algorithms; complete operational testing of suits; write final report and deliver product to NAVAIR.
- (U) (\$85) VIRTUAL FIT CHECK SYSTEM: Complete data collection and analysis, and write final report (completion extended from FY 2001).
- (U) (\$100) CERTIFICATION OF MEDICAL ANCILLARY EQUIPMENT FOR USE IN HYPERBARIC CHAMBERS: Complete accuracy testing of selected equipment and develop a list of items for submission to the Supervisor of Diving for inclusion on the authorized Navy list for hyperbaric use; write final report.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

- (U) (\$243) EVALUATION OF FIELD-BASED PROCEDURES FOR SCREENING DIVERS' AIR: Complete field testing of gas analysis equipment; write final report.
- (U) (\$24) SEA TRIALS OF NEW SUBMARINE WATCHSTANDING SCHEDULE: Initiate, in third quarter FY 2002, a study to evaluate the effectiveness of a new watchstanding schedule on submariner performance.
- (U) (\$179) UNDERWATER AND DIVE STATION WORK-SITE NOISE SURVEYS: Initiate study to determine the total noise exposure of Navy diving operations (surface and underwater combined) and establish recommendations for length of exposure that will not cause long-term hearing loss.
- (U) (\$97) FEASIBILITY OF USING HAND-HELD PERSONAL DIGITAL ASSISTANTS IN HYPERBARIC ENVIRONMENTS: Initiate and complete one-year study to evaluate the use of personal digital assistants (PDAs) to function in hyperbaric environments as a device for running the established Submarine Escape and Rescue Program (SEAREX).
- (U) (\$327) MERCURY ABATEMENT IN DENTAL WASTEWATER: Initiate test and evaluation of several commercial mercury abatement systems for use in Navy Dental Treatment Facilities. Systems will be recommended to Navy Dentistry that have the greatest potential for long term use in light of increasingly stringent standards for mercury in wastewater.
- (U) (\$400) TACTICAL MEDICAL COORDINATING SYSTEM: Initiate field testing of a radio frequency device to track the location of casualties through the medical evacuation system. Effort will be coordinated with other IM/IT initiatives and structured to be compatible with TMIP.
- (U) (\$250) SOF MOBILE PERFORMANCE EVALUATION TEST BATTERY: Initiate field testing of a refined research tool used for determining physical and cognitive performance decrements in special operations forces that result from fatigue or environmental exposure.
- (U) (\$400) ADVANCED FROZEN BLOOD PROCESSOR: Initiate clinical testing of an advanced frozen red blood cell processor that will prolong the shelf life of red cells after they have been thawed from 24 hours to 2 weeks.
- (U) (\$2,500) NAVAL MEDICAL RESEARCH CENTER RADIATION EXPOSURE TREATMENT: Initiate investigations into optimizing the efficacy and safety of rescuing adult hematopoietic stem cells from irradiated bone marrow.
- (U) (\$1,000) NAVAL BLOOD RESEARCH LABORATORY: Initiate studies to obtain FDA approval for use of frozen platelets.
- (U) (\$500) SONARMAN EARCOM TECHNOLOGY: Initiate studies to develop a combined hearing protection and voice communications terminal for use in high noise-level environments.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

3. (U)FY 2003 PLAN:

- (U) (\$150) SEA TRIALS OF NEW SUBMARINE WATCHSTANDING SCHEDULE: Complete study to evaluate the effectiveness of a new watchstanding schedule on submariner performance.
- (U) (\$200) UNDERWATER AND DIVE STATION WORK-SITE NOISE SURVEYS: Complete study to determine the total noise exposure of Navy diving operations (surface and underwater combined) and establish recommendations for length of exposure that will not cause long-term hearing loss.
- (U) (\$300) MERCURY ABATEMENT IN DENTAL WASTEWATER: Complete test and evaluation of several commercial mercury abatement systems for use in Navy Dental Treatment Facilities. Recommend system to Navy Dentistry for installation in Dental Treatment Facilities and Clinics.
- (U) (\$380) TACTICAL MEDICAL COORDINATING SYSTEM: Complete field testing of a radio frequency device to track the location of casualties through the medical evacuation system. Effort will be coordinated with other IM/IT initiatives and structured to be compatible with TMIP.
- (U) (\$225) SOF MOBILE PERFORMANCE EVALUATION TEST BATTERY: Complete field testing of a refined research tool used for determining physical and cognitive performance decrements in special operations forces that result from fatigue or environmental exposure.
- (U) (\$425) ADVANCED FROZEN BLOOD PROCESSOR: Complete clinical testing of an advanced frozen red blood cell processor that will prolong the shelf life of red cells after they have been thawed from 24 hours to 2 weeks.
- (U) (\$5,515) TRANSITION PROJECTS FROM THE WARFIGHTER PROTECTION FUTURE NAVAL CAPABILITY: Provide test and evaluation of a variety of products (not yet determined) that arise from the Warfighter Protection Future Naval Capability.

B. (U)PROGRAM CHANGE SUMMARY:

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N PROJECT NUMBER:
 PROGRAM ELEMENT TITLE: Medical Development PROJECT TITLE:
 (Engineering)

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) President's Budget:	5,273	5,455	0
(U) Adjustments from FY 2000 PRESBUDG:	20,916	3,917	0
(U) FY 2002 / 2003 President's Submission	26,189	9,372	7,154

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

- (U) FY 2001: Decrease of (-194) for Section 8086: .7% Pro-Rate Reduction
 - Increase of (3,000) due to FY 2001 Congressional Add – Bone Marrow Transplant Technology
 - Increase of (4,000) due to FY 2001 Congressional Add –Dental Research
 - Increase of (2,000) due to FY 2001 Congressional Add –High Resolution Digital Mammography
 - Increase of (1,500) due to FY 2001 Congressional Add –Mobile Intergrated Diagnostic
 - Increase of (6,000) due to FY 2001 Congressional Add –Voice Interactive Device
 - Increase of (1,000) due to FY 2001 Congressional Add –Smart Aortic Arch Catheter
 - Increase of (5,000) due to FY 2001 Congressional Add –Coastal Cancer Control
 - Decrease of (-60) for Government-Wide Rescission
 - Decrease of (-530) for SBIR
 - Decrease of (-800) for 01 Actuals

- (U) FY 2002: Decrease of (-83) for Section 8123: Management Reform
 - Increase of (500) due to FY 2002 Congressional Add – Sonarman Earcom Technology
 - Increase of (1,000) due to FY 2002 Congressional Add – Naval Blood Research Laboratory
 - Increase of (2,500) due to FY 2002 Congressional Add – Naval Medical Research Center Radiation Exposure Treatment

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M2650 Voice Instructional Devices (VID)	0	5,947	0	0	0	0	0		

Note: FY 2001 Voice Instructional Devices funds (\$6,000) were received in this Program Element under project M0933.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2002 PLAN:

- (U) (\$5,896) VOICE INSTRUCTIONAL DEVICES (VID): Continue development of preventive medicine and clinical consult systems and expand product lines to include integrating voice activation capability into a portable diagnostics system and at least one other medical information system.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) President's Budget:	0	0	0
(U) Adjustments from FY 2000 PRESBUDG:	0	5,947	0
(U) FY 2002 / 2003 President's Submission	0	5,947	0

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

(U) FY 2002 : Increase of (6,000) due to FY 2002 Congressional Add – VID; decrease of (-53) for Section 8123: Management Reform

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M2896 Military Dental Research	0	2,775	0	0	0	0	0		

Note: FY 2001 Military Dental Research funds (\$4,000) were received in this Program Element under project M0933.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2002 PLAN:

- (U) (\$2,775) Continue studies to address dental readiness and preparedness issues prior to deployment, as well as further development of salivary tests to identify exposure to infectious diseases and bioterrorism agents.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) President's Budget:	0	0	0
(U) Adjustments from FY 2000 PRESBUDG:	0	2,775	0
(U) FY 2002 / 2003 President's Submission	0	2,775	0

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

(U) FY 2002: increase of (2,800) due to FY02 Congressional Add – Military Dental Research; decrease of (-25) due to Section 8123: Management Reform

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
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M2897 High Resolution Digital Mammography

	0	1,487	0	0	0	0			
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Note: FY 2001 High Resolution Digital Mammography Funds (\$2,000) were received in this Program Element under project M0933.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2002 PLAN:

- (U) (1,487) Continue studies to develop second generation enhanced resolution digital mammography.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) President's Budget:	0	0	0
(U) Adjustments from FY 2000 PRESBUDG:	0	1,487	0
(U) FY 2002 / 2003 President's Submission	0	1,487	0

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

(U) FY 2002: increase of (1,500) due to FY02 Congressional Add – High Resolution Digital Mammography, decrease of (-13) due to Section 8123: Management Reform

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
 PROGRAM ELEMENT TITLE: Medical Development
 (Engineering)

PROJECT NUMBER:
 PROJECT TITLE:

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M2795 Coastal Cancer Control (MUSC)	0	3,469	0	0	0	0	0		

Note: FY 2001 Coastal Cancer Control funds (\$5,000) were received in this Program Element under project M0933.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2002 PLAN:

- (U) (\$3,469) COASTAL CANCER CONTROL (MUSC): Continue research efforts that will focus on supporting applied cancer research projects that focus on primary and secondary prevention in underserved areas.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N
PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER:
PROJECT TITLE:

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) President's Budget:	0	0	0
(U) Adjustments from FY 2000 PRESBUDG:	0	3,469	0
(U) FY 2002 / 2003 President's Submission	0	3,469	0

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

(U) FY 2002: increase of (3,500) due to FY02 Congressional Add – Coastal Cancer Control (MUSC); decrease of (-31) due to Section 8123: Management Reform

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5				R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
Total PE Cost	17.300	23.673	46.618	47.854	30.371	50.723	48.721	Continuing	Continuing
F0253 Navigation and Electro-Optical Support	1.536	2.271	14.584	12.186	6.868	10.038	8.092	Continuing	Continuing
W0676 Improved ID Development	0.000	1.755	1.956	2.038	2.223	3.387	3.864	Continuing	Continuing
W1253 Combat ID System	2.957	6.023	10.934	10.889	5.900	14.810	13.796	Continuing	Continuing
X0921 NAVSTAR GPS Equipment	12.807	13.624	19.144	22.741	15.380	22.488	22.969	Continuing	Continuing
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reliable and secure Navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. The Photonics Mast (F0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Mast exploits a wide portion of the electro-magnetic spectrum utilizing advanced Electro-Optic/thermal imaging; and communications intercept/Electronic Warfare Support (ES). The Combat Identification System (CIS) project (W1253) and Improved Identification Development (W0676) covers the Navy lead of a MK XII Mode5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. Per OSD direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. NAVSTAR Global Positioning System (GPS), project (X0921) is a space-based radio positioning and navigation system that provides users with worldwide, all weather, three dimensional position, velocity and precise time data based on a constellation of 24 satellites. Navy Sensor System Interface (NAVSSI) is a system that provides an integrated navigation message structure for network distribution to support combat, information and other mission critical capabilities. Navy Navigation Warfare (NAVWAR) is a key element and subset of this program and will provide Air and Sea units with jam resistant GPS antennas and GPS receivers to ensure the continued use of GPS information in a hostile environment. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems).</p>									

R-1 SHOPPING LIST - Item No. 140

Exhibit R-2, RDT&E Budget Item Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Budget Item Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support					
COST (\$ in Millions)		Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
F0253	Navigation and Electro-Optical Support		1.536	2.271	14.584	12.186	6.868	10.038	8.092	Continuing	Continuing

A. (U) Mission Description and Budget Item Justification: The Photonics Mast mounted on the Universal Modular Mast will provide imaging capability for the VIRGINIA class submarine. The Photonics Mast design exploits a wide portion of the electro-magnetic spectrum through advanced E-O and thermal imaging and Electronic Warfare Support (ES)/Communications intercept. It will provide significant improvements in submarine stealth and infrared imaging capability. The non-hull penetrating design provides freedom in ship design and space savings for VIRGINIA CLASS and future submarines designs. The system was designed to satisfy Operational Requirement #365-87-94.

(U) Program Accomplishments and Plan:

1. (U) FY 2001 Accomplishments:

- (U) (\$0.611) Continued Photonics Mast At-Sea Test and Evaluation.
- (U) (\$0.755) Continued On-Board Team Trainer Development.
- (U) (\$0.170) Completed EDM Shore Based Testing.

2. (U) FY 2002 Plan:

- (U) (\$0.929) Complete On-Board Team Trainer Development.
- (U) (\$0.183) EDM removal/Deinstallation Planning.
- (U) (\$1.159) Continue Photonics At Sea Test And Evaluation.

3. (U) FY2003 Plan:

- (U) (\$1.494) Complete Photonics At Sea Test And Evaluation.
- (U) (\$0.736) EDM Removal/Deinstallation.
- (U) (\$2.942) Initiate Imaging Console development.
- (U) (\$1.148) Initiate Realtime Rangefinder for Type 8 Periscope development.
- (U) (\$8.264) Initiate Low Level TV, improved image processing, and Photonics Mast all digital signal path development.

EXHIBIT R-2a, RDT&E Budget Item Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support					
B. (U) Program Change Summary										
				FY2001	FY2002	FY2003				
(U) FY2002 President's Budget:				1.561	2.291					
(U) Appropriated Value				1.575	2.291					
(U) Adjustment To FY2001/2002 Appropriated Value/FY2002 President's Budget:				(0.039)	(0.020)					
(U) FY2003 Pres Budget Submit:				1.536	2.271	14.584				
(U) Change Summary Explanation:										
(U) Funding:										
FY2001: Minor adjustments (-\$39K). FY2002: Minor adjustments (\$-20K).										
(U) Schedule: Not applicable.										
(U) Technical: Not applicable.										
C. (U) Other Program Funding Summary										
		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
(U) SCN Line 201300 (Photonics Mast only)		20.850	22.904	23.727	23.802	23.814	24.535	49.328	CONT.	CONT.
OPN Line 083100		0	0	7,980	3,290	12,048	14,777	26,196	CONT.	CONT.
OPN Line 083105		0	0	0	170	540	1,752	1,989	CONT.	CONT.
(U) Related RDT&E										
(U) PE 0603226E (Experimental Evaluation of Inovative Technology)										
(U) PE 0604558N (The VIRGINIA Class Design Development)										
D. (U) Acquisition Strategy: Not Applicable.										
E. (U) Schedule Profile: See Attached.										

APPROPRIATION/BUDGET ACTIVITY

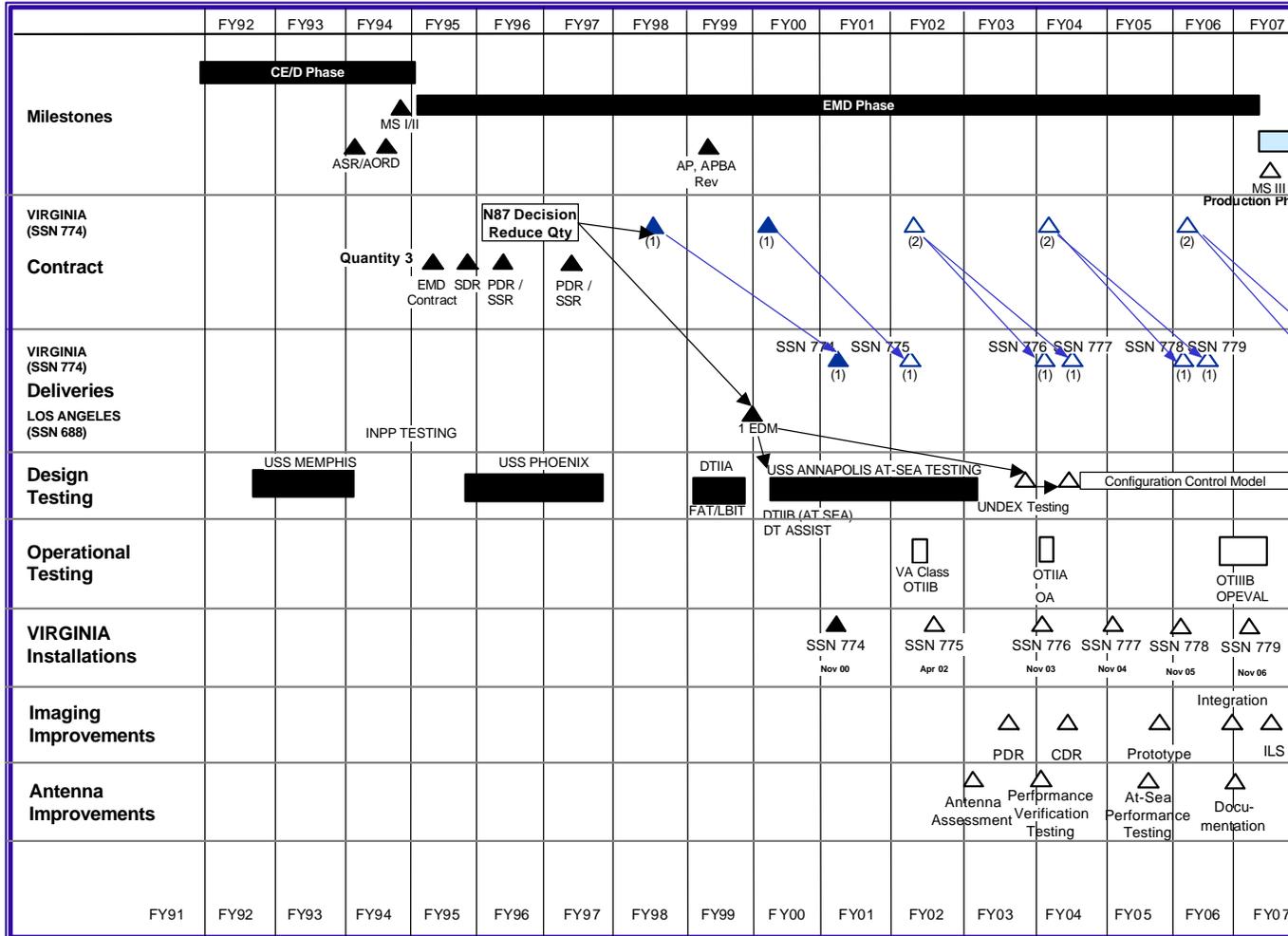
RDT&E,N/BA-5

PROGRAM ELEMENT NUMBER AND NAME

0604777N NAVIGATION/ID SYSTEMS

PROJECT NUMBER AND NAME

F0253 Navigation and Electro-Optical Support



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CLASSIFICATION:

Exhibit R-3 Cost Analysis								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N/BA-5			0604777N NAVIGATION/ID SYSTEMS				F0253 Navigation and Electro-Optical Support					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	C/CPIF	Kollmorgen, Northampton, MA	34.173	0.506	10/00	0.283	10/01	5.630	10/02	0.000	40.592	
Software Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	WR/RC	NUWC Newport	3.898	0.812	10/00	1.283	10/01	4.050	10/02	CONT.	CONT.	
Site Platform Integration											0.000	
Licenses											0.000	
Tooling											0.000	
Miscellaneous	Various	Various	0.271	0.030	12/00	0.357	05/02	4.413	01/03	CONT.	CONT.	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			38.342	1.348		1.923		14.093		CONT.	CONT.	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

Exhibit R-3 Cost Analysis									DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NAME AND NUMBER F0253 Navigation and Electro-Optical Support						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation											0.000	
Developmental/Operational T&E											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Management Support Services ETS	Various	Various	3.302	0.140	11/00	0.348	11/01	0.491	11/02	CONT.	CONT.	
Miscellaneous												
Travel			0.397	0.048		0.000		0.000				
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			3.699	0.188		0.348		0.491		CONT.	CONT.	
Remarks:												
Total Cost			42.041	1.536		2.271		14.584		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 140

Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				1.755	1.956	2.038	2.223	3.387	3.864	Continuing	Continuing
RDT&E Articles Qty											
<p>A. (U) MISSION AND BUDGET ITEM JUSTIFICATION: Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems). The Improved Identification Development project (W0676) covers the navy lead of a MK XIIA Mode 5 Upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. These funds provide for Mode 5 integration into the AN/UPX-29(V) IFF system which interfaces with the AEGIS baseline weapon system and for other AN/UPX-29(V) improvements.</p> <p>1. FY02 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.913) Initiate development of MARK XIIA Mode 5 modifications to the AN/UPX-29(V) for integration with the AEGIS weapons system baseline 5.3.8. - (U) (\$.789) Initiate modification of the AN/UPX-29(V) IFF system software for interface with the AEGEIS weapons system. - (U) (\$.053) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 68. <p>2. FY03 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$1.111) Complete development and baseline testing of MARK XIIA Mode 5 modifications to the AN/UPX-29(V) to include integration and land based testing. - (U) (\$.560) Complete development of AN/UPX-29(V) system software for interface with AEGIS weapons system. - (U) (\$.285) Develop core ILS documents. 											

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT

B. (U) PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.

	FY2001	FY2002	FY 2003
(U) FY 2002 President's Budget:		1.771	
(U) Adjustments from the FY2002 President's Budget:		-0.016	
(U) FY 2003 President's Budget Submit:		1.755	1.956

CHANGE SUMMARY EXPLANATION:

- (U) Funding: FY2002 decrease of \$0.016 for congressional reduction: Section 8123 Management Reform Initiative.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
Identification Systems - 42MT	13.246	18.053	32.633	39.707	22.475	28.138	28.618	Continuing	Continuing

R-1 Shopping List Item No. 140

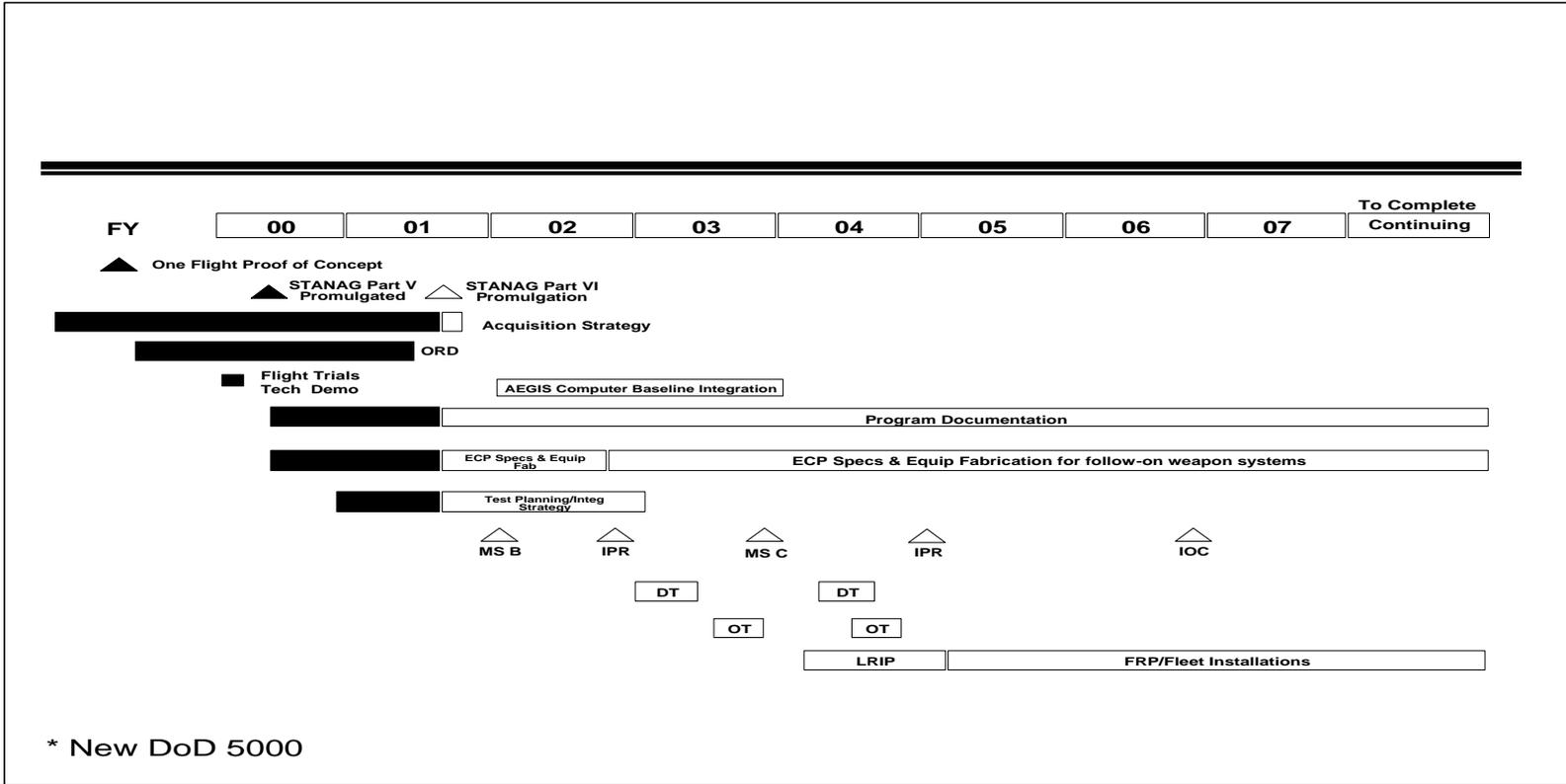
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W0676 Improved ID Development

D. (U) ACQUISITION STRATEGY: The acquisition strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons Systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.



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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604777N NAVIGATION/ID SYSTEMS			W0676 IMPROV ID DEVELOPMENT						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	WR	NAWCAD				0.913	01/02	1.111	11/02	Continuing	Continuing	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						0.913		1.111		Continuing	Continuing	
Remarks:												
Development Support Equipment												
Software Development	WR	NAWCAD				0.789	01/02	0.560	11/02	Continuing	Continuing	
Training Development												
Integrated Logistics Support	WR	NAWCAD						0.285	11/02	Continuing	Continuing	
Configuration Management												
Technical Data												
GFE												
Subtotal Support						0.789		0.845		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W0676 IMPROV ID DEVELOPMENT						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment						0.053					0.053	
Subtotal Management						0.053				Continuing	Continuing	
Remarks:												
Total Cost						1.755		1.956		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification									DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604777N NAVIGATION/ID SYSTEMS				W1253 Combat ID System					
COST (\$ in Millions)		Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			2.957	6.023	10.934	10.889	5.900	14.810	13.796	Continuing	Continuing
RDT&E Articles Qty											
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: In 1995, the Under Secretary of Defense (Acquisition and Technology)/Vice Chairman, Joint Chiefs of Staff [USD(A&T)/VCJCS] tasked the Services to develop a high-level plan and long-range strategy for migrating to new digital Mark XII (MK XII) equipment. The services were also tasked to work with participating NATO Allies to develop a new MK XII waveform and document it in a NATO Standard Agreement (STANAG). The Navy took the lead in a waveform development effort conducted in coordination with a Five-Nation Technical Working Group (TWG), supported by Joint Services and Industry. The Navy, in conjunction with the TWG, designed, developed, modeled, and tested a new waveform – MK XIIA Mode 5. A separate Five-Nation Communication Security (COMSEC) group, led by the National Security Administration (NSA), developed a new cryptographic algorithm and associated Cryptographic Equipment Interoperability Requirements Specification. STANAG 4193, Part V has been ratified and promulgated to all NATO nations, and Part VI was approved for promulgation in May 2001.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.190) Developed Test and Evaluation and platform integration strategy for MK XIIA Mode 5. - (U) (\$1.759) Began development of Mode 5 hardware in preparation for the Developmental Test in FY03. - (U) (\$.400) Began development of cryptographic hardware. - (U) (\$.073) Initiated Stage 3 Frequency Allocation Request and conducted waveform analysis and simulation. - (U) (\$.535) Continued to develop and coordinate program documentation. <p>2. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$2.523) Continue development of Mode 5 hardware ECP, Stage 3 Frequency assignment and cryptographic hardware in preparation for the Developmental Test in FY03. - (U) (\$.385) Conduct Mode 5 Test Planning and preparation. - (U) (\$2.933) Initiate software development for integration into F/A-18E/F. - (U) (\$0.182) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 68. <p>3. FY 2003 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$4.883) Continue software development for integration into F/A-18E/F. - (U) (\$3.548) Conduct DT & OT of the Mode 5 upgrade for AN/UPX-37 Interrogator, Common Digital Transponder, and AN/APX-111 Combined Interrogator/Transponder - (U) (\$.089) Complete Stage 3 Frequency assignment, and initiate Stage 4 Frequency assignment request - (U) (\$1.109) Initiate Mode 5 ECP development for OL-483 E-2C Interrogator System - (U) (\$.449) Conduct platform integration studies for follow-on Mode 5 integrations - (U) (\$.856) Integrated Logistics Support and Training 											

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W1253 Combat ID System																																										
<p>B. (U) PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:10%; text-align: right;">FY2001</th> <th style="width:10%; text-align: right;">FY2002</th> <th style="width:10%; text-align: right;">FY2003</th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: right;">3.147</td> <td style="text-align: right;">6.077</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments from FY2002 President's Budget:</td> <td style="text-align: right;">-0.190</td> <td style="text-align: right;">-0.054</td> <td></td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: right;">2.957</td> <td style="text-align: right;">6.023</td> <td style="text-align: right;">10.934</td> <td></td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: FY2001 decrease of \$.190 includes a reduction of \$.089 for reprioritization of requirements within the Navy, a decrease of \$.094 for a Small Business Innovative Research Assessment, and a decrease of \$.007 for the FY2001 rescission. FY2002 decrease of \$.054 for Congressional reduction: Section 8123 Management Reform Initiative.</p> <p>(U) Schedule: Not Applicable.</p> <p>(U) Technical: Not Applicable.</p> <p>C. (U) OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"><u>Line Item No. & Name</u></th> <th style="width:5%; text-align: right;"><u>FY 2001</u></th> <th style="width:5%; text-align: right;"><u>FY 2002</u></th> <th style="width:5%; text-align: right;"><u>FY 2003</u></th> <th style="width:5%; text-align: right;"><u>FY 2004</u></th> <th style="width:5%; text-align: right;"><u>FY 2005</u></th> <th style="width:5%; text-align: right;"><u>FY 2006</u></th> <th style="width:5%; text-align: right;"><u>FY 2007</u></th> <th style="width:5%; text-align: right;"><u>To Complete</u></th> <th style="width:5%; text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>Identification Systems - 42MT</td> <td style="text-align: right;">13.246</td> <td style="text-align: right;">18.053</td> <td style="text-align: right;">32.633</td> <td style="text-align: right;">39.707</td> <td style="text-align: right;">22.475</td> <td style="text-align: right;">28.138</td> <td style="text-align: right;">28.618</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table>						FY2001	FY2002	FY2003		(U) FY 2002 President's Budget:	3.147	6.077			(U) Adjustments from FY2002 President's Budget:	-0.190	-0.054			(U) FY 2003 President's Budget Submit:	2.957	6.023	10.934		<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	Identification Systems - 42MT	13.246	18.053	32.633	39.707	22.475	28.138	28.618	Continuing	Continuing
	FY2001	FY2002	FY2003																																									
(U) FY 2002 President's Budget:	3.147	6.077																																										
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<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																			
Identification Systems - 42MT	13.246	18.053	32.633	39.707	22.475	28.138	28.618	Continuing	Continuing																																			

R-1 Shopping List Item No. 140

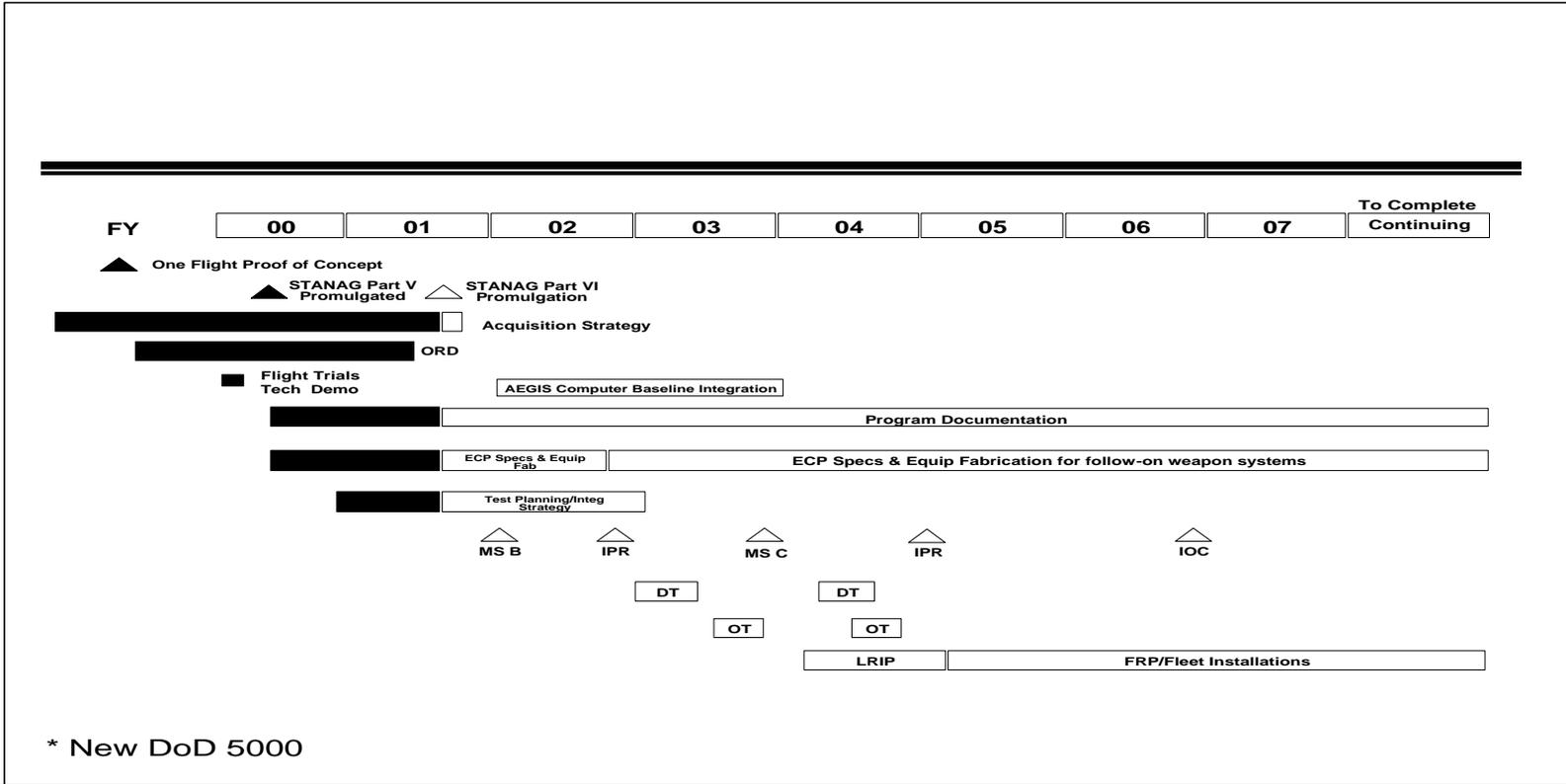
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W1253 Combat ID System

D. (U) ACQUISITION STRATEGY: The acquisition strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons Systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.



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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604777N NAVIGATION/ID SYSTEMS			W1253 Combat ID System						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	VAR	VAR	0.185	1.754	VAR	0.798	VAR	0.746	VAR	Continuing	Continuing	
Ancillary Hardware Development												
Systems Engineering	WR	NAWCAD	0.602	0.400	VAR	0.341	01/02	0.187	11/02	Continuing	Continuing	
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.787	2.154		1.139		0.933		Continuing	Continuing	
Remarks:												
Development Support Equipment												
Software Development	WR	NAWCAD				2.933	01/02	4.515	11/02	Continuing	Continuing	
Training Development	WR	NAWCAD						0.144	11/02	Continuing	Continuing	
Integrated Logistics Support	WR	NAWCAD				0.145	01/02	0.466	11/02	Continuing	Continuing	
Configuration Management												
Technical Data	WR	NAWCAD				0.053	01/02			Continuing	Continuing	
GFE												
Subtotal Support						3.131		5.125		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME W1253 Combat ID System					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	WR	NAWCAD	0.275	0.190	11/00	0.385	11/01	2.862	11/02	Continuing	Continuing	
Operational Test & Evaluation	WR	NAWCAD/COMOPTVFOR, Norfolk						0.353	VAR	Continuing	Continuing	
Tooling												
GFE												
Subtotal T&E			0.275	0.190		0.385		3.215		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	VAR	VAR				0.450	VAR	1.008	VAR	Continuing	Continuing	
Government Engineering Support	WR	NAWCAD		0.442	11/00	0.476	11/01	0.482	11/02	Continuing	Continuing	
Program Management Support	WR	NAWCAD	0.234	0.146	11/00	0.225	11/01	0.134	11/02	Continuing	Continuing	
Travel	WR	NAWCAD		0.025	02/01	0.035	11/01	0.037	11/02	Continuing	Continuing	
Labor (Research Personnel)												
SBIR Assessment						0.182					0.182	
Subtotal Management			0.234	0.613		1.368		1.661		Continuing	Continuing	
Remarks:												
Total Cost			1.296	2.957		6.023		10.934		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment						
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
X0921 NAVTAR Global Positioning System (GPS) Equipment	12.807	13.624	19.144	22.741	15.380	22.488	22.969	Continuing	Continuing

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission is to provide supported, affordable, integrated, and interoperable navigation solutions to the warfighters. RDT&E funds are used to perform all the non-recurring Global Positioning System (GPS) Surface Ship, Submarine and Aircraft Integration efforts. The Aircraft integration efforts are required for 102 different configurations of Navy, Marine Corps and Coast Guard aircraft in response to the CNO GPS Integration Guidance (GIG), the Public Law 103-160 and the Secretary of Defense As Soon As Possible direction of April 1996 (ASAP program). The GIG directs GPS design functional characteristics for the aircraft and Public Law 103-160 directs the schedule for completion of all installations by 30 September 2005. The GPS is a space-based radio positioning and navigation system that provides users with worldwide, all-weather, three-dimensional position, velocity and precise time data based on a constellation of 24 satellites. PMW/PMA-156 is the central office responsible for funding all GPS aircraft integration RDT&E efforts performed by over 20 NAVAIR program offices, dozens of DoD/Navy field activities and laboratories, and dozens of contractors. The aircraft installation recurring efforts are funded separately by PMW/PMA-156 and the platform program offices with APN dollars. The primary tasks to be accomplished for each of the 102 aircraft configurations include: GPS integration design studies; acquisition of aircraft and lab RDT&E assets; development of test aircraft hardware and/or software designs; development of Integrated Logistics Support (ILS) elements to support test (operator and maintenance training, technical manuals); and Formal Navy Test and Evaluation (Development and Operational Test). Other tasks include the development of: new hardware and software systems for over 3300 Naval Aircraft to meet GIG, GPS Flight In Controlled Airspace (FICA), CNS/ATM and JPALS requirements when existing systems are unsuitable; the Digital Data Set (DDS); the Control Display Navigation Unit (CDNU) and associated software for many different aircraft and modifications to the GPS Mission Planning Module for the Naval Mission Planning System (NAVMPS)/Joint Mission Planning System (JMPS). The Surface Ship and Submarine integration efforts include two vitally important navigation integration initiatives. The first program is the Navigation Sensor System Interface (NAVSSI) development. The NAVSSI is the surface ship system with a requirement of integrating with over 54 systems/interfaces on 131 surface ship platforms. This operational requirement for the NAVSSI has two distinct functions. The first is the integration and distribution of real time navigation and time sources, primarily GPS, to combat systems, combat support systems, air alignment systems and support systems. The second is as the primary surface ship navigators' electronic workstation required to perform fully integrated Electronic Chart Display Information System for the Navy (ECDIS-N) navigation. NAVSSI is an evolutionary acquisition development. A low cost ECDIS-N system will also be developed to support non-NAVSSI ships. The second surface ship development program is the replacement of the AN/WRN-6, which is out of production and approaching obsolescence, with low cost Versa Module Europa (VME) GPS Receiver Card (GVRC) technology combined with fiber optic antenna capability and a new security chip. For NAVSSI ships, this integration will be done in conjunction with NAVSSI integrations. (For non-NAVSSI surface ships, PMW/PMA 156 is developing a low cost system to replace the AN/WRN-6.) For submarine systems, PMW/PMA 156 is supporting ongoing NAVSEA initiatives for the replacement of the AN/WRN-6 systems with the GVRC card technology. The National Defense Authorization Act for Fiscal Year 1999 included GPS language directing DoD to start "The development of an enhanced Global Positioning System [as] an urgent national security priority."

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment
<p>OSD directed the start of Navy GPS NAVWAR procurements starting in 2001 in order to equip Naval platforms with GPS Anti-Jam upgrades to enable them to operate in an environment with GPS interference. The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel tasked by OPNAV N6 and ASN(RD&A), assessed the Navy's GPS Vulnerabilities and recommended specific actions to resolve serious vulnerability issues. As a result, OPNAV N633 and N880 (now N78) drafted the Navy Enhanced GPS User Equipment ORD to address operational requirements that were validated and approved on June 7, 2000. This signed ORD will result in the formation of two ACAT III GPS NAVWAR programs for Air (already designated ACAT III) and Sea (pending designation). This has become the basis for the Navy's GPS NAVWAR program. Given the current threat to GPS navigation from jamming, and the increasing use of GPS by potential adversaries, RDT&E funds are required to design, develop, and test anti-jam antenna and receiver equipment for use on naval platforms. Funds are also required to integrate identified JPO GPS modernization requirements (new signals in space, enhanced receiver security, and operation in controlled airspace) into naval platforms and other GPS UE. All of the above efforts are directed by, tasked by and funded through PMW/PMA-156.</p>		

R-1 SHOPPING LIST - Item No. 140

Exhibit R-2a, RDT&E Project Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) 1. FY 2001 ACCOMPLISHMENTS:</p> <p>(U) (\$4.508) Continued NAVSSI upgrade, integration engineering and testing with shipboard combat, weapons, navigation, and command and control systems. Evolutionary upgrades include all integrations required for the support of Aircraft Carrier, Destroyer and Amphibious Platform Integrations. Testing of evolutionary upgrades include collection/distribution of precise navigation and time data from/to Aircraft Carrier, Destroyer and Amphibious Systems. Continued the coordination of Electronic Charting (ECDIS) integration with the US Coast Guard developed programs. Developed interface support for LHD-8, LPD-18 and DDG-51 Navigation integration efforts. Began integrations with Hostile Force Integrated Targeting System (HITS), AEGIS LAN Interconnection System Local Area Network (ALIS LAN), Tactical Control System (TCS), Position Location Reporting Systems (PLRS) and weather tracking. Began development for integration into emerging combat, combat support and support systems including Joint Precision Approach Landing System (JPALS). Continue support of NSSN integration of GVRC. Continued development of Interactive Electronic Technical Manual (IETM) to meet the standards of the current NAVSSI Block. Transition NAVSSI hardware/software into updated environment. Initiated precise time and time interval effort to support hot-starting GPS-guided munitions such as ERGM, Tomahawk, Standard Missile-3 (SM-3) and Land Attack Standard Missile (LASM). Restarted development of NAVSSI Computer Based Trainer (CBT) to meet the standards of the current NAVSSI Block. Developed a NAVSSI Lite system to support the acceleration of electronic charting systems for surface platforms.</p> <p>(U) (\$1.229) Continued aircraft integration efforts.</p> <p>(U) (\$7.070) Continued NAVWAR integration efforts on initial platforms and begin selected DT and OT testing on the C-130 and P-3C. Began equipment specification development and integration efforts for the F/A-18 C/D/E/F conformal antenna design and the GAS-1N integration on the AV-8B and other priority platforms in each category area. Completed data analysis and contracting efforts for the GAS-1N preproduction units. Continued RDT&E efforts on F/A-18 C/D/E/F, (modeling/simulation and integration analysis). Completed LCAC feasibility assessment test data reduction, validate modeling techniques, formalize ground plane design, and prepare for M-class DT/OT. Began initial GAS-1 Antenna Electronics (AE) Fiber Optic Antenna Link (FOAL) design and analysis for the NAVSSI integration. Began RDT&E modeling/simulation and integration/analysis for M-class ships. Continued to evaluate anti-jam technology for application to selected Naval air, surface, and subsurface platforms. This includes continued evaluation of ongoing RDT&E special projects/SBIRs associated with anti-jam GPS user equipment and prevention programs. Continued support as the Navy's representative to the GPS Joint Program Office for all GPS Modernization Initiatives.</p>		

R-1 SHOPPING LIST - Item No. 140

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment
<p>(U) 2. FY 2002 PLAN:</p> <p>(U) (\$8,924) Air NAVWAR: Complete Development Test/Operational Test (DT/OT) on the C-130, and P-3C. Continue DT/OT on the HH-60 and AV-8B. Validate aircraft modeling/simulation data. Start NAVWAR anti-jam conformal antenna and MAGR 2000 receiver design integrations on F/A 18C/D/E/F. Continue GAS-1N and MAGR 2000 design integrations on the AV-8B. Begins RDT&E efforts on the EA-6B.</p> <p>(U) (\$1.000) Sea NAVWAR: Finalize groundplane design and baseline GAS-1 system interface requirements. Complete DT/OT on an M-Class ship and LCAC.</p> <p>(U) (\$3.700) Continue NAVSSI integration engineering for shipboard combat, weapons, navigation, command and control systems and NAVSSI Lite development.</p> <p>(U) 3. FY 2003 PLAN:</p> <p>(U) (\$12.877) Air NAVWAR: Continue NAVWAR RDT&E on the F/A-18C/D/E/F, AV-8B, and EA-6B. Begin DT/OT on the F/A-18C/D/E/F and EA-6B. Complete DT/OT on the AV-8B and F/A-18 C/D.</p> <p>(U) (\$4,196) Sea NAVWAR: Begin RDT&E modeling/simulation and integration analysis for MCS-12 and LHA-1 class of ships. Conduct a friendly emitter analysis on the CG-47. Begin Modeling and Simulation and integration analysis for CG-47/DDG-51 to include development and contracting for the Fiber Optic Antenna Link and GAS-1 AE integration with NAVSSI.</p> <p>(U) (\$2.071) Continue NAVSSI integration engineering for shipboard combat, weapons, navigation, command and control systems and NAVSSI training development.</p> <p>B. (U) PROGRAM CHANGE SUMMARY</p> <p>(U) Funding: FY 2001: Section 8086: 0.7% Pro-Rata Reduction (-\$96K), Government-Wide Rescission (-\$30K), SBIR Assessment (-\$110K), BTR Paperless Acquisition (-\$271K), Navy Miscellaneous Adjustments (-\$418K).</p> <p>(U) Funding: FY2002: Section 8123 Management Reform Initiative (-\$121K)</p> <p>(U) Schedule: None.</p> <p>(U) Technical: None.</p>		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment						
B. (U) Other Program Funding Summary												
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program			
(U) O&MN PE # 0305164N	0.672	2.473	2.417	2.660	2.595	2.614	2.679	Continuing	Continuing			
(U) OPN Line #26570	11.975	13.896	11.402	16.787	12.958	14.284	13.602	Continuing	Continuing			
(U) APN - Common Avionics	12.921	7.018	4.548	24.260	18.204	18.652	23.043	Continuing	Continuing			
(U) Related RDT&D: None												
D. (U) ACQUISITION STRATEGY: (NAVWAR) Participate in GPS Joint Program Office FY 01-FY 06 procurements for GAS-1 and GAS-1M anti-jam antennas. Initiate Navy contracting options for smaller array anti-jam antenna solutions for selected aircraft. Participate in GPS JPO procurements where practicable for GPS Modernization Enhancements. See attached Milestone chart.												
E. (U) NAVWAR Schedule Profile:												
	FY 2001				FY 2002				FY 2003			
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Air and Sea Phase 1												
Major Milestones:					^ Sea M/S B		^ Sea M/S C					
					^ Air LRIP (C-130/P-3C)		^ Air M/S C					
Contracts/Procurements					^ GAS 1 Option 5 (Air)		^ GAS 1 Option 6 (Air and Sea)				^ GAS 1 F/O opt (Air and Sea)	
C 130 (Lead Platform)			C 130 DT/OT				C-130 Installs				P-3 Installs	
HH 60						HH 60 DT/OT					HH 60 Install	
MCM					M-class & LCAC DT/OT						M-Class & LCAC Installs	
LHA/CG-47											LHA, /CG-47, DDG-51 RDT&E	
Air Phase 2												
Major Milestones:					^ M/S B						^ GAS-1N M/S C	
Contracts												^ GAS-1N Full Production Contract
AV-8												AV 8 DT/OT
Note: Similar classes of aircraft and ships will use the "Extension of Application" philosophy for OT to avoid unnecessary testing. (Schedule does not show all platforms integrations)												

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Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3, Project Cost Analysis							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Product Development	Various	Other Contracts	260.415	2.464	Various	1.100	Various	2.819	Various	Cont	Cont	
Product Dev. (SSC -SD)	WX	SSC-SD	58.510	5.918	10/00	0.250	10/01	0.750	10/02	Cont	Cont	
Product Dev. (Other Inhouse)	WX	Various Field Activities	437.966	1.282	10/00	1.500	10/01	1.250	10/02	Cont	Cont	
Subtotal Product Development			756.891	9.664		2.850		4.819		0.000	0.000	
Remarks:												
Development Support Equipment	Various	Various	12.710	0.000		0.000				Cont	Cont	
Software Development	Various	SSC-SD/Platform Primes				3.250	10/01	1.650	10/02	Cont	Cont	
Training Development	WX	SSC-SD						1.000	10/02	Cont	Cont	
Integrated Logistics Support	Various	SSC/NAWC/SIR/DCS				0.450	10/01	0.750	10/02	Cont	Cont	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			12.710	0.000		3.700		3.400		0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis

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Exhibit R-3, Project Cost Analysis							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NAME AND NUMBER X0921 NAVSTARS GPS Equipment						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
T&E (NAWC PAX)	WX	NAWC PAX	9.514	0.655	10/00	0.800	10/01	0.900	10/02	CONT	CONT	
T&E (DCS Corp)	CPAF	DCS Corp, Pax	0.417	0.679	10/00	0.325	10/01	0.350	10/02	CONT	CONT	
T&E (SSC San Diego)	WX	SSC San Diego	0.000	0.695	10/00	0.450	10/01	0.410	10/02	CONT	CONT	
T&E Platform Testing	Various	Various Contractors				1.379	Various	4.187	Various	CONT	CONT	
Subtotal T&E			9.931	2.029		2.954		5.847		CONT	CONT	
Remarks:												
Contractor Engineering Support	Various	DCS, Other Contracts				1.500	10/01	1.813	10/02	CONT	CONT	
Government Engineering Support	Various	SSC, NAWC				0.700	10/01	1.120	10/02	CONT	CONT	
Program Management Support	CPAF	DCS Corp, San Diego	4.146	1.114	10/00	1.920	10/01	2.145	10/02	CONT	CONT	
Management Support Services												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			4.146	1.114		4.120		5.078		CONT	CONT	
Remarks:												
Total Cost			783.678	12.807		13.624		19.144		CONT	CONT	
Remarks:												

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Exhibit R-3, Project Cost Analysis

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Exhibit R-2, FY 2003 RDT&E,N Budget Item Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

(U) COST: (Dollars in Thousands)

Table with columns: PROJECT NUMBER & TITLE, FY 2001 ACTUAL, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows include Advanced Deployable System X1300, ADS - Accelerate Cable Burial Capability X9085, ADS - Fiber Optic Tech X9086, and Total.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Advanced Deployable System (ADS) is an undersea surveillance system composed of distributed sensors that can be rapidly and unobtrusively deployed in regional contingency areas for use against enemy submarines and in support of littoral warfare.

Advanced Deployable Systems (ADS) - Accelerate Cable Burial Capability: Enhance ADS cable survivability and provide a trunk extension installation capability

Advanced Deployable Systems (ADS) - Fiber Optic Tech: Reduce risk in development of remotely powered all optical array technology for application to ADS program.

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced Deployable System (ADS)

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2001 ACTUAL	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
Advanced Deployable System X1300	30,089	34,404	35,861	23,644	58,535	64,224	89,861	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Advanced Deployable System (ADS) is an undersea surveillance system composed of distributed sensors that can be rapidly and unobtrusively deployed in regional contingency areas for use against enemy submarines and in support of littoral warfare. It is designed to detect and track modern diesel electric and nuclear submarines, as well as provide the capability for tracking surface ships and detecting sea minelaying. ADS possesses great flexibility with respect to laydown options, ranging from single barrier to large area fields. It has built upon test experience with distributed sensor fields in shallow noisy water, and used collected data for processing verification. ADS utilizes conventional acoustic sensors and incorporates processing technologies and advanced sensors and technologies from other related programs.

1. (U) FY 2001 Accomplishments:

- (U) (\$20,999) Continued engineering and manufacturing development. Continued manufacturing technology /cost reduction engineering analysis and process design for array assembly and integration. Within engineering and manufacturing development began detailed design of the Engineering Development Model (EDM), component testing, and the detailed design and testing of deployment approach for the Platform Bravo Underwater System arrays. Conducted Platform F deployment demonstration of single array system. Conducted cable survivability testing. Refined logistic supports and developed training.

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced
Deployable System (ADS)

- (U) (\$8,392) Continued to conduct system engineering analysis of array design and array deployment options for P³I program. This included efforts to begin Processing and Analysis Segment (PAS)/C4I development of a small field OPEVAL system and the software development. Also included engineering development of the PB method A barrier deployment and relay van concept. The PAS development will primarily occur through the Acoustic Rapid COTS Insertion (ARCI) I program and the C4I development is a coordinated effort with PD-15 and PD-17. Effort also included beginning the software development of the Mission Planning workstation and preplanning for OPEVAL/TECHEVAL area. Initiated development of Logistics Management Information. Continued hardware and software development for processing and algorithm development for PAS. Accelerated Large Field processing development and conducted follow-on automation technology insertion.
- (U) (\$698) Conducted integrated baseline review for EDM contract effort and award EDM contract. Managed ADS through monitoring of contractor and government technical, schedule, and cost performance.

2. (U) FY 2002 PLAN:

- (U) (\$6,533) Development of the specification and layout for the communications relay van and software development in four functional areas Mission Planning, Array Element Localization, relay van monitoring, and Acoustic Rapid COTS Insertion (ARCI) Phase 2 for ADS. Support for system engineering. Continue cable testing for enhanced survivability. Develop Mission Planning Workstation for automated determination of ADS array placement to meet mission requirements.
- (U)(\$10,149) Complete preliminary designs of all four of the ISS Hardware Configuration Items (HWCI) and the Software CSCI(Computer Software Configuration Item). Complete detailed designs of three of the four HWCI, including the Control and Monitor HWCI, the Wet End Capsule HWCI and the Inboard Mechanical Equipment HWCI. Complete the Software CSCI detailed design. For each detailed design completed, the associated Detailed Design Reviews (DDR) will also be conducted and the drawings will be released.
- (U) (\$893) Development of the system level integrated Verification Plan and initiation of the development of system level test documentation to include the TEMP, Target Threat Verification Plan, and Environmental Documentation. Support to the System Engineering Management Team (SEMT) and ADS Systems Engineering Team (ASET) in the definition of developmental testing objectives for system level testing.

R-1 Shopping List - Item No Page 141-3 of 141-15

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced
Deployable System (ADS)

- (U) (\$11,224) Array cable pack design, array internode splice, array dispenser, T-shell, develop winding technology, lithium battery development, node and sensor CCA (Circuit Card Assembly) design, and array assembly manufacturing. Conduct design verification testing of deployment methods and wet end hardware.
 - (U) (\$5,605) System Engineering Project Management support for the ADS project office; Manage ADS through monitoring of contractor and government technical, schedule, and cost performance. Develop Integrated Logistics Support (ILS) plans and infrastructure. Complete revised APBA based on ORD modification.
3. (U) FY 2003 PLAN:
- (U) (\$7,175) Integration and delivery of the communications relay van, test and delivery of wet end lay down capability for the Mission Planner, test and delivery of the ARCI Phase 3 for ADS (software build that will be used for System Integration Test (SIT), and test and delivery of the Array Element localization software. Support for system engineering.
 - (U) (\$10,581) Complete Trunk Capsule HWCI detailed design. In addition, all drawings will be released and hardware purchase and build will be completed. Design Verification Tests will be conducted. The System Verification Review and Functional Configuration Audit will be completed. Prepare for upcoming major system tests.
 - (U) (\$2,257) Completion of required system level test documentation (TEMP, TTVP, EA). Monitoring of the developmental testing conducted by the IPTs and the management of the Integrated Verification Plan. Planning for the conduct of system level testing in FY04. Management of external relationships to DOT&E and COTF with respect to testing.
 - (U) (\$9,526) Array build sensors and array for Dual Array Test (DAT) and System Integration Test (SIT), design and build of shells, assembly of shells for deployment, design and build of Shore Line Transition Bottle (SLTB), design of SLC extension, pack array dispensers, and R/M/S design influence.
 - (U) (\$6,322) Continue System Engineering Project Management support for the ADS project office; Manage ADS through monitoring of contractor and government technical, schedule, and cost performance. Continue Development of ILS plans and infrastructure.

R-1 Shopping List - Item No Page 141-4 of 141-15

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
 PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
 Project Title: Advanced Deployable System (ADS)

B. PROGRAM CHANGE SUMMARY: FY 2001: Congressional Add for Advance Deployable System Acceleration (+\$10,500K), Section 8086: 0.7% Pro-Rata Reduction (-\$218K), Government-Wide Rescission PL 106-554 (-\$68K), SBIR Assessment (-\$204K), Federal Technology (-\$22K), ASN (RDA) BTR for Chief Technology Office (CTO) Synthetic Aperture Sonar (-\$405K), Miscellaneous Navy Adjustments (-\$408K).

PROGRAM CHANGE SUMMARY: FY 2002: Section 8123: Management Reform Initiative (-\$307K).

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

	FY 2001 ACTUALS	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
OPN# 222100 (BLI)	0	0	0	0	43,615	69,151	75,195	CONT.	CONT.

(U) RELATED RDT&E:

PE	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	TOTAL
X9102	0	6,800	0	0	0	0	0	0	6,800

Funds first phase of the Automated IUSS Mission Planning System. This effort builds on the work begun in the ADS program (PE 0604784N) to automate array lay down and cable routing plans and allows the mission planner the capability to rapidly update the plan. Functional requirements for Fixed Surveillance Systems (FSS), Advanced Deployable System (ADS) and Surveillance Towed Array Sensor (SURTASS) will be combined and prioritized with fleet input. Software will be developed as GCCS-M segments that are at least level 6 DII-COE compliant. Included is approximately 800K to collect environmental and physical data for an area of high fleet tactical interest for mission planner demonstration.

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced Deployable System (ADS)

D. (U) ACQUISTION STRATEGY:

- 1. Sole source award of EDM cost plus award fee contract to the PDNRR contractor.
- 2. ADS will conduct a phased approach to meet fleet requirements.

- PHASE I PLATFORM BRAVO METHOD ALPHA
- PHASE II PLATFORM BRAVO METHOD BRAVO
- PHASE III OFFBOARD SENSOR
- PHASE IV ADVANCED DEPLOYABLE CAPSULE

E. (U) SCHEDULE PROFILE: PHASE I

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Program Milestones			
Engineering Milestones	Technical Baseline Review System Design Review		Wet End Sys Validation Review
T&E Milestones		Shell Deployment/Drop Test	ISS In-Water Design Verification Test (DVT); Deployment Mechanism test, Dual Array Test, System Safety Test, Dockside Integration Test
Contract Milestones	EDM IBR Award EDM Contract		

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT NUMBER: X1300
PROJECT TITLE: Advanced
Deployable System

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
a. Dry End System (DES)	6,923	6,533	7,175
b. Installation Subsystem (ISS)	3,641	10,149	10,581
c. Test & Evaluation (T&E)	409	893	2,257
d. Wet End System (WES)	15,399	11,224	9,526
e. Systems Engineering Project Management (SEPM)	3,717	5,605	6,322
Total	30,089	34,404	35,861

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 1)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5			PROGRAM ELEMENT: 0604784N									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA	89,334								89,334	89,334
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA		13,862	11/01	18,755	09/02	15,788	09/03	CONT.	CONT.	CONT.
Government Engineering Support	WX	SSC-San Diego San Diego, CA	33,040	5,313	06/01	5,102	06/02	6,152	06/03	CONT.	CONT.	
Engineering Supt Services	C/CPFF	AHA Rockville, MD	3,100	20	03/01						3,120	3,120
Engineering Supt Services	SS/CPFF	APL/JHU Laurel, MD	4,258	280	10/00	133	03/02	176	03/03	CONT.	CONT.	CONT.
Engineering Supt Services	SS/CPFF	ARL/UT Austin, TX	6,009	559	09/00	754	10/01	453	10/02	CONT.	CONT.	CONT.
Software Development	C/CPFF	Orincon San Diego, CA	11,420	4,114	08/01	1,000	09/02		10/02	CONT.	CONT.	CONT.
OTHER CONTRACTS			14,279	1,770		2,240		5,085		CONT.	CONT.	
OTHER ACTIVITIES			18,106	85		85		767		CONT.	CONT.	
Subtotal Product Development			179,546	26,003		28,069		28,421		CONT.	CONT.	CONT.
Remarks:												

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B.(U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 2)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	AMRON San Diego, CA	1,887	876	01/01	0		0			2,763	
Government Engineering Support	WX	SSC-San Diego San Diego, CA	6,824	125	06/01	550	06/02	685	06/03	CONT.	CONT.	
		OTHER CONTRACTS	12,940	564		1,211		711		CONT.	CONT.	
		OTHER ACTIVITIES	820	623		2,827		2,471		CONT.	CONT.	
Subtotal Support			22,471	2,188		4,588		3,867		CONT.	CONT.	
Remarks:												

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 3)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation		OTHER CONTRACTS	7,574	11		10		34		CONT.	CONT.	
Developmental and Operational Test and Evaluation	WX	SSC-San Diego San Diego, CA	10,738	156	06/01	315	06/02	608	06/03	CONT.	CONT.	
Developmental and Operational Test and Evaluation		OTHER ACTIVITIES	4,658							CONT.	CONT.	
Subtotal T&E			22,970	167		325		642		CONT.	CONT.	
Remarks:												

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 4)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	AMRON San Diego, CA	5,277								5,277	
Program Management Support		OTHER CONTRACTS	5,041	1,519		808		1,726		CONT.	CONT.	
Program Management Support		OTHER ACTIVITIES	1,941	212		614		1,205		CONT.	CONT.	
Subtotal Management			12,259	1,731		1,422		2,931		CONT.	CONT.	
Total Cost			237,246	30,089		34,404		35,861		CONT.	CONT.	
Remarks:												

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9086
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Fiber Optic Tech

(U) COST (Dollars in thousands)

PROJECT

Table with columns: NUMBER & TITLE, FY 2001 ACUTALS, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Row: X9086 ADS - Fiber Optic Tech. Row: TOTAL 0 3,965 0 0 0 0 0 0 3,965

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reduce risk in development of remotely powered all optical array technology for application to ADS program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- 1. (U) FY 2001 Accomplishments: N/A
2. (U) FY 2002 PLANS: (\$3,965K) - Reduce risk in fiber optical technology and integrate fiber optic technology application to rapidly deployable surveillance systems.
3. (U) FY 2003 PLANS: N/A

B. (U) PROGRAM CHANGE SUMMARY:

FY 2002: Congressional Plus-Up (+\$4,000K), Section 8123: Management Reform Initiative (-\$35K)

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

Table with columns: FY 2001 ESTIMATE, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows: OPN#2221, OMN

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9086
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Fiber Optic Tech

(U) RELATED RDT&E:
(U) PE 0604784N X1300 Advanced Deployable System

D. (U) ACQUISITION STRATEGY:

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
Program Milestones			
Engineering Milestones		Wet end system validation review Q3	
T&E Milestone			In water design verification test (DVT) Q1
Contract Milestones			

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9085
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Accelerate Cable Burial Capacity

(U) COST (Dollars in thousands)

Table with columns: PROJECT NUMBER & TITLE, FY 2001 ACUTALS, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Row: X9085 ADS - Accelerate Cable Burial Capability. Row: TOTAL (0, 3,965, 0, 0, 0, 0, 0, 0, 0, 3,965)

A (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Enhance ADS cable survivability and provide a trunk extension installation capability

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- 4. (U) FY 2001 Accomplishments: N/A
5. (U) FY 2002 PLANS: (\$3,965K) Acceleration of cable burial capability incorporating larger diameter cable and surface ship deployment leveraging the dual application program burial sled.
6. (U) FY 2003 PLANS: N/A

B. (U) PROGRAM CHANGE SUMMARY:

FY 2002: Congressional Plus-Up (\$4,000K), Section 8123: Management Reform Initiative (-\$35K).

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9085
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Accelerate Cable Burial Capacity

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

Table with 9 columns: FY 2001 ESTIMATE, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows include OPN#2221 and OMN.

(U) RELATED RDT&E:
(U) PE 0604784N X1300 Advanced Deployable System

D. (U) ACQUISITION STRATEGY:

Table with 3 columns: FY2001, FY2002, FY2003. Rows include Program Milestones, Engineering Milestones, T&E Milestone, and Contract Milestones.

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE Program Element 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost				762.957	1,727.500	1,931.753	2,489.103	1,987.246	1,689.760	Continuing	TBD
D2261/JSF SDD				762.957	1,727.500	1,931.753	2,489.103	1,987.246	1,689.760	Continuing	TBD
Quantity of RDT&E Articles											14
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Strike Fighter program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom (UK) is a partner in this phase, and agreements with several other countries are in negotiation.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD) because it encompasses system development and demonstration of new end-items prior to production approval decision.</p>											

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM				PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER SDD					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				762.957	1,727.500	1,931.753	2,489.103	1,987.246	1,689.760	Continuing	TBD
RDT&E Articles Qty											14

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Strike Fighter program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom (UK) is a partner in this phase, and agreements with several other countries are in negotiation.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: Not Applicable. (FY 2001 appropriated funding was reprogrammed to Program Element 0603800N.)

2. FY 2002 PLANS: (Breakout reflects Navy, Air Force and UK funding only; excludes TBD anticipated other international funding)

- (U) (\$1,476.500) Commence execution of System Development and Demonstration (SDD) for Air System with Lockheed Martin and F135 Propulsion System with Pratt & Whitney.

- (U) (\$ 44.900) Continue General Electric's development of a second, interchangeable JSF engine (GE F136) for competition in production (previously begun in associated program elements 0603800N and 0603800F).

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EXHIBIT R-2a, RDT&E Project Justification		DATE:																
		February 2002																
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER SDD																
<p>- (U) (\$ 98.450) Commence SDD mission support including systems engineering activities, modeling, simulation and analysis efforts and program office functions.</p> <p>- (U) (\$1,619.850) Total FY 2002 Plans</p> <p>3. FY 2003 PLANS: (Breakout reflects Navy, Air Force and UK funding only; excludes TBD anticipated other international funding)</p> <p>- (U) (\$3,192.000) Continue execution of SDD for Air System with Lockheed Martin and F135 Propulsion System with Pratt & Whitney.</p> <p>- (U) (\$ 150.000) Continue General Electric's development of a second, interchangeable JSF engine (GE F136) for competition in production.</p> <p>- (U) (\$ 290.168) Continue SDD mission support including systems engineering activities, modeling, simulation and analysis efforts and program office functions.</p> <p>- (U) (\$3,632.168) Total FY 2003 Plans</p> <p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table border="0"> <thead> <tr> <th></th> <th align="center"><u>FY2001</u></th> <th align="center"><u>FY2002</u></th> <th align="center"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td></td> <td align="right">767.259</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY 2002 President's Budget:</td> <td></td> <td align="right">-4.302</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget:</td> <td></td> <td align="right">762.957</td> <td align="right">1,727.500</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2002 net decrease of \$4.302 million reflects an undistributed congressional reduction of \$6.802 million offset by a Congressional increase of \$2.500 million for GE F136 engine development.</p> <p>(U) Schedule: Not Applicable.</p> <p>(U) Technical: Not Applicable.</p>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:		767.259		(U) Adjustments from the FY 2002 President's Budget:		-4.302		(U) FY 2003 President's Budget:		762.957	1,727.500
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>															
(U) FY 2002 President's Budget:		767.259																
(U) Adjustments from the FY 2002 President's Budget:		-4.302																
(U) FY 2003 President's Budget:		762.957	1,727.500															

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM					D2261/JOINT STRIKE FIGHTER SDD			
(U) C. OTHER PROGRAM FUNDING SUMMARY: (Dollars in Millions) This is a joint program with no executive service. Program Element 0604800F continues development efforts budgeted in 0603800F prior to FY 2002. The United Kingdom is a partner in SDD. Anticipated other international funding is TBD.									
RDT&E	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
0604800F	0	761.893	1,743.668	1,941.951	2,485.774	1,984.386	1,686.592	Continuing	Continuing
United Kingdom	0	95.000	161.000	200.000	356.000	384.000	355.000	Continuing	Continuing
Related RDT&E:									
0603800N	341.164	0	0	0	0	0	0	0	1,950.617
0603800F	341.167	0	0	0	0	0	0	0	1,907.352
0603800E	0	0	0	0	0	0	0	0	118.006
United Kingdom	0.800	0	0	0	0	0	0	0	201.221
Multi-Lateral	1.700	0	0	0	0	0	0	0	32.100
Canada	0	0	0	0	0	0	0	0	10.600
Italy	0	0	0	0	0	0	0	0	10.000
RELATED PROCUREMENT:									
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
USN									
0204146N (Quantity)	0	0	0	0	50.079	762.878 (4)	1,325.330 (8)	Continuing	TBD
USAF									
0207142F (Quantity)	0	0	0	0	74.014	1,042.863 (6)	1,815.676 (14)	Continuing	TBD
NOTE: FY 2005 funding is for advance procurement requirements.									

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER SDD
<p>(U) D. ACQUISITION STRATEGY:</p> <p>Activities in the prior phase of JSF centered around three distinct objectives to provide a sound foundation for the start of (SDD) in Fall 2001:</p> <ul style="list-style-type: none">(1) facilitated the Services' development of fully validated, affordable operational requirements;(2) lowered risk by investing in and demonstrating key leveraging technologies that lowered the cost of development, production and ownership; and(3) demonstrated operational concepts. <p>Early warfighter and technologist interaction was an essential aspect of the requirements definition process, and achieved JSF affordability goals. To an unprecedented degree the JSF Program used cost-performance trades early, as an integral part of the weapon system development process. The Services defined requirements through an iterative process, balancing weapon system capability against life cycle cost at every stage. Each iteration of requirements was provided to industry. They evolved their designs and provided cost data back to the warfighters. The warfighters evaluated trades and made decisions for the next iteration. This iterative process produced iterations of the Services' Joint Interim Requirements Documents in 1995, 1997, 1998 and culminated in the approved joint Operational Requirements Document (ORD) in FY 2000.</p> <p>A sizable technology maturation effort was conducted to reduce risk and life cycle cost (LCC) through technology maturation and demonstrations. The primary emphasis was on technologies identified as high payoff contributors to affordability, supportability, survivability, and lethality. Numerous demonstrations were accomplished to validate performance and life cycle cost impact to component, subsystem, and the total system.</p> <p>In November 1996 contracts were awarded to Boeing and Lockheed Martin for Concept Demonstration Programs. These competing contractors built and flew concept demonstrator aircraft, conducted concept unique ground demonstrations, and refined their respective weapon system concepts. Specifically, Boeing and Lockheed Martin demonstrated commonality and modularity, STOVL hover and transition, and low speed handling qualities of their respective weapon system concepts. Pratt and Whitney provided propulsion hardware and engineering support. General Electric continued development of a second, interchangeable, engine for competition in production.</p> <p>Following evaluation of proposals and a favorable Milestone B decision, the JSF Program entered SDD on 26 October 2001 with SDD contract awards to Lockheed Martin and Pratt & Whitney. The SDD plan reflects a block approach, based on open systems architecture, for accomplishing aircraft and weapons integration. General Electric continues propulsion development efforts.</p> <p>Procurement of the USAF and USMC JSF variants is planned to begin in FY 2006, with advance procurement for Lot 1 in FY 2005. Procurement of the USN JSF variant is planned to begin in FY 2008, with advance procurement for Lot 3 in FY 2007.</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER SDD
<p>(U) E. SCHEDULE PROFILE:</p> <p>1 Qtr 2002 Milestone B and Award of SDD Contract 2 Qtr 2002 Air System Requirements Review (ASRR) 2 & 3 Qtr 2002 Integrated Baseline Reviews (IBRs) at GE, Pratt & Whitney and Lockheed Martin 3 Qtr 2003 Preliminary Design Review (PDR) 2004-2005 Critical Design Reviews (three variants) 1 Qtr FY06 CTOL First Flight 3 Qtr FY06 STOVL First Flight 2 Qtr FY07 CV First Flight 2008 1st Operational Aircraft Delivered 2010 USMC Initial Operational Capability (IOC) 2011 USAF IOC 2012 USN IOC</p>		

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-5			0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM			D2261 / JOINT STRIKE FIGHTER SDD						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
SDD Air System	C/CPAF	Lockheed Martin				684.500	10/01	2,432.000	10/02	Continuing	Continuing	18,981.928
		Ft. Worth TX										
Award Fees (Non-Add)												
P&W F135 Engine	SS/CPAF	Pratt & Whitney				792.000	10/01	760.000	10/02	Continuing	Continuing	4,827.786
		Hartford CT										
Award Fees (Non-Add)												
Subtotal SDD												
GE F136 Engine	SS/CPAF	General Electric				44.900	11/01	150.000	11/02	Continuing	Continuing	411.000*
		Cincinnati OH										
Award Fees (Non-Add)												
Mission Support	Various	Field Activities				80.077		263.669		Continuing	Continuing	
Advisory & Assitance Services	SS/CPFF	Sverdrup/Anteon				3.150	03/02	4.330	01/03	Continuing	Continuing	
	SS/CPFF	Stanley				3.806	03/02	8.126	01/03	Continuing	Continuing	
	SS/CPFF	Aegis				1.960	03/02	2.730	01/03	Continuing	Continuing	
	SS/CPFF	LSI/Veridian				4.457	03/02	6.163	01/03	Continuing	Continuing	
	Various	Field Sites				5.000	02/02	5.150	10/03	Continuing	Continuing	
Subtotal A&AS												
Subtotal Product Development						1,619.850		3,632.168		Continuing	Continuing	
Remarks:												
*Details of fiscal year award fee profiles for Lockheed Martin, Pratt & Whitney and General Electric are being established or refined.												
*The GE Contract Target Value reflects the negotiated value of the current Phase IIIb.												

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology			C2906 Marine Corps Information Technology DEV/MOD					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	6.835	10.934	8.079	6.199	6.513	6.202	6.395	Continuing	Continuing
RDT&E Articles Qty									
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) The MAGTF Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contribute to the CINC's Common Operating Picture (COP) to support rapid accurate decision making. This effort is closely aligned with and builds upon the products and technologies being developed and transitioned through S&T efforts of the Expeditionary Logistics and Future Naval Capabilities (FNC).</p> <ol style="list-style-type: none"> 1. The CSSE Shared Data Environment (SDE), formerly known as Data Warehousing, is a cornerstone concept of the Integrated Logistics Capability. It will incorporate data warehousing technologies and products to provide one-stop shopping for data supporting CSSE/SE decision-making processes. It will stage CSSE/SE data and integrate decision support tools (DST) to enable command and control (C2), situational awareness, and total asset visibility at all levels of command, from the CINC to the company commander. The establishment of the CSSE SDE will eliminate the need for individual applications to perform these tasks for themselves and will contribute to a more cost-effective, efficient application development environment. 2. The Marine Corps vision for Automated Information Technology (AIT) is the proper mix of a suite of technologies that enables each user to efficiently and effectively capture, aggregate, and transfer data and information, and, as a consequence, integrate with Logistics Automated Information Systems (LOG AIS) using the optimum technology for their particular application. Individual user's data and information will be integrated with DoD-wide systems technologies, software, and encoding formats as well as with international commercial applications and users. AIT will facilitate data collection and flow to all AISs to better achieve full Total Asset Visibility (TAV), and enhance and streamline business processes and warfighting capability. AIT technology will ensure current DoD applications maintain compatibility while remaining postured to implement future technological advances and process changes. Effective use of AIT will streamline the Marine Corps' logistics processes and enhance its warfighting capabilities. 3. Total Force Structure Management System (TFSMS) is a replacement for 4 existing systems: Table of Manpower Requirements (T/MR), Logistics Management Information System (LMIS), Trooplist, and Manning Level Process (MLP). The result will be consolidated management of Tables of Organization (T/O) & Tables of Equipment (T/E) via a single integrated system. 4. Total Force Administration Systems (TFAS) are to be used by commanders, staffs and individual Marines in the active duty, retired and reserve forces and will give the ability to conduct centralized and decentralized processing of payroll and personnel administration information. This centralized processing and database will enhance and assist decision-making by providing improved quality of life services to the Marines. TFAS will integrate and share information from sources both internal to the Marine Corps Total Force System and other databases such as the Personnel Evaluation System and the Manpower Order Writing System. 5. Marine Corps Total Force System (MCTFS), formerly SELMS: This program provides integrated personnel and pay functionality for all active and reserve Marines as well as personnel data for all retirees. This is a "Class 1 Automated Information System" that consolidates active, reserve, and retiree processes into a single integrated process that can be accessed worldwide. This system is the heart of data that feeds the entire Marine Corps in numerous forums. With an integrated, SINGLE logical database that processes transactions at one location (Defense Mega-Center DMC) in St. Louis, MO, MCTFS is the "premier" pay and personnel system among our Armed Forces and has historically been a top priority among AIS. 6. The Marine Corps Performance Evaluation System (PES) provides for the periodic reporting, recording and analysis of the performance and professional character of Marines in the grades of Sergeant through Major General. Its fundamental concepts are accuracy, accountability, simplicity and consistency of policy and evaluation methods. The primary purpose of the PES is to support the centralized selection, promotion and retention of the most qualified Marines of the Active and Reserve Components. The PES also aids in the assignment of personnel and supports other personnel management decisions as required. The new PES replaces two legacy systems previously used to support the old PES. The new PES is being developed under a Preplanned Product Improvement (P3I) Acquisition Strategy. Initial Operational Capability (IOC) has been completed in FY00. Additional improvements will continue in FY01 through FY03. 									

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:		
(U) FY 2001 Accomplishments		
• (U) \$ 0.172	SDE: Developed and maintained high level implementation for Phase I.	
• (U) \$ 0.106	SDE: Established CSSE/SE Data Warehousing.	
• (U) \$ 0.119	SDE: Isolated CSSE/SE information requirements into executable increments.	
• (U) \$ 0.045	SDE: Integrated executable increments in FY01 POA&M;	
• (U) \$ 1.000	SDE: Began developing C2 data warehousing increments.	
• (U) \$ 0.320	SDE: Integrated COMDAR into CSSE/SE data warehousing implementation.	
• (U) \$ 0.151	SDE: Explored and evaluated types and uses of various decision support tools	
• (U) \$ 0.061	SDE: Identified decision support increments to be applied.	
• (U) \$ 0.016	SDE: Identified buy or build options to support decision support requirements.	
• (U) \$ 0.425	AIT: Began software development to ensure technology requirements are realized to support the Marine Corps logistics processes.	
• (U) \$ 0.150	TFSMS: Began initial development.	
• (U) \$ 1.850	TFSMS: Developed desktop pilot.	
• (U) \$ 0.080	TFSMS: Identified and documented software interfaces.	
• (U) \$ 0.200	TFSMS: Developed users manuals, and training plan materials.	
• (U) \$ 0.150	TFSMS: Conducted software testing.	
• (U) \$ 0.000	TFSMS: Conducted peer reviews and inspections.	
• (U) \$ 0.082	TFSMS: Developed software transition plan.	
• (U) \$ 1.200	FIMS II: Completed and implemented system design.	
• (U) \$ 0.166	IMS: Developed/maintained Information Management Database.	
• (U) \$ 0.408	TIGER: Deployed "Sametime, Software package and Quickplace, software application" across the Command.	
• (U) \$ 0.134	ONR HOLD	
(U) Total \$ 6.835		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD
(U) FY 2002 Planned Program		
• (U) \$ 0.608	SDE: Program support for configuration control board, system integration, integrated process team, and strategic plan update.	
• (U) \$ 0.225	SDE: Develop incremental business implementation plan.	
• (U) \$ 0.403	SDE: Assist data collection for incremental systems.	
• (U) \$ 0.144	SDE: Analyze legacy information systems for incremental structure.	
• (U) \$ 0.108	SDE: Decompose legacy information systems for incremental structure.	
• (U) \$ 0.150	SDE: Begin site survey.	
• (U) \$ 0.230	SDE: Perform technical architecture assessment.	
• (U) \$ 0.250	SDE: Register legacy IS in META-DATA repository.	
• (U) \$ 0.180	SDE: Integrate legacy META-DATA into common data architecture.	
• (U) \$ 0.108	SDE: Update CSSE data architecture	
• (U) \$ 0.108	SDE: Design target interface to include data transformation rules.	
• (U) \$ 0.360	SDE: Design target data mart decision support applications.	
• (U) \$ 0.180	SDE: Design target data warehouse database modifications.	
• (U) \$ 0.108	SDE: Implement data warehouse increment into target environment.	
• (U) \$ 0.432	SDE: Develop and install necessary gateways.	
• (U) \$ 0.108	SDE: Incorporate the legacy database increment.	
• (U) \$ 0.360	SDE: Implement data mart decision support applications.	
• (U) \$ 0.162	SDE: Initiate the legacy interfaces.	
• (U) \$ 0.090	SDE: Implement data warehouse data mart increment.	
• (U) \$ 0.424	SDE: Hardware business strategy analysis.	
• (U) \$ 0.020	SDE: COTS migration tools/licenses.	
• (U) \$ 0.298	AIT: Continue developing software with AIT capabilities in conjunction with the DOD AIT implementation plan.	
• (U) \$ 0.450	TFAS: Begin incorporating requirements for developing software tasks and integrating software changes into existing system.	
• (U) \$ 0.152	TFAS: Program Management Support.	
• (U) \$ 0.200	TFAS: Begin developmental study of user requirements for operating system.	
• (U) \$ 0.100	TFAS: Begin testing for implementation into the existing system.	
• (U) \$ 2.300	TFSMS: Complete software integration/customatization and interfaces of the desktop pilot.	
• (U) \$ 0.095	TFSMS: Complete identifying and documenting software interfaces.	
• (U) \$ 0.200	TFSMS: Continuing and complete the development of users manuals, and training plan materials.	
• (U) \$ 0.150	TFSMS: Complete software testing.	
• (U) \$ 0.069	TFSMS: Continue and complete peer reviews and inspections.	
• (U) \$ 0.080	TFSMS: Continue and complete the software transition plan.	
• (U) \$ 0.844	MCTFS: Begin and complete development of web server migration, DIMHRS interface and TFAS interface development to add user functions to UD/MIPS SELMS module.	
• (U) \$ 1.238	PES: Begin and complete development of electronic signature capability and development of a web-based applications. Begin development of the software to maintain consistency with security practices and policies.	
(U) Total \$	10.934	

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD
(U) FY 2003 Planned Program		
• (U) \$	0.654	SDE: Continue program support for configuration control board, system integration, integrated process team, and strategic plan update.
• (U) \$	0.225	SDE: Continue development of incremental business implementation plan.
• (U) \$	0.620	SDE: Continue data collection for increment systems.
• (U) \$	0.288	SDE: Continue analysis of legacy IS for increment.
• (U) \$	0.216	SDE: Continue decomposition legacy IS increment structure.
• (U) \$	0.300	SDE: Continue site survey.
• (U) \$	0.360	SDE: Continue technical architecture assessment.
• (U) \$	0.300	SDE: Continue to register legacy IS in META-DATA repository.
• (U) \$	0.288	SDE: Continue to integrate legacy META-DATA into common data architecture.
• (U) \$	0.162	SDE: Continue to update CSSE data architecture.
• (U) \$	0.270	SDE: Continue design target interface to include data transformation rules.
• (U) \$	0.504	SDE: Continue design target data mart decision support applications.
• (U) \$	0.270	SDE: Continue design target data warehouse database modifications.
• (U) \$	0.216	SDE: Continue to implement data warehouse increment into target environment.
• (U) \$	0.648	SDE: Continue development and installation of necessary gateways.
• (U) \$	0.162	SDE: Continue to incorporate the legacy database increment.
• (U) \$	0.360	SDE: Continue to implement data mart decision support applications.
• (U) \$	0.360	SDE: Continue the legacy interfaces.
• (U) \$	0.162	SDE: Continue to implement data warehouse data mart increment.
• (U) \$	0.186	SDE: Continue hardware business strategy analysis.
• (U) \$	0.058	SDE: Continue COTS migration tools/licenses.
• (U) \$	0.298	AIT: Continue development of software with AIT capabilities in conjunction with the DOD AIT implementation plan.
• (U) \$	0.175	TFAS: Program Management Support.
• (U) \$	0.225	TFAS: Continue to integrate software changes into existing system.
• (U) \$	0.152	TFAS: Begin Independent Verification & validation testing of software.
• (U) \$	0.124	TFSMS: Complete development of TFSMS to include refinement of the system's technical software architectures.
• (U) \$	0.496	PES: Continue development of enhancements to include electronic signature and database access, web-based application, technology refreshment.
(U) Total \$	8.079	

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology			C2906 Marine Corps Information Technology DEV/MOD				
	FY2001	FY2002	FY2003					
(U) FY 2002 President's Budget:	6.770	11.031						
(U) Adjustments from the President's Budget:								
(U) SBIR/STTR Transfer	-0.079							
(U) Execution Adjustment	-0.597							
(U) Minor Affordability Adjustment		-0.097						
(U) Program Adjustment	0.741							
(U) FY 2003 President's Budget:	6.835	10.934	8.079					
CHANGE SUMMARY EXPLANATION:								
(U) Funding: See Above.								
(U) Schedule: Not Applicable.								
(U) Technical: Not Applicable.								
(U) C. OTHER PROGRAM FUNDING SUMMARY:								
<u>Line Item No. & Name</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Complete	Total Cost
(U) PMC BLI # 464100 AIT	2390	0	0	0	0	0	0	2390
(U) PMC BLI# 464100 MAGTF LOG AIS	1947	2247	2001	0	0	0	0	6195
(U) PMC BLI#464100 TFSMS	0	399	0	0	300	0	0	699
(U) PMC BLI#464100 TFAS	0	1046	2879	3177	1370	0	0	8472
(U) PMC BLI#464100 SDE	234	0	0	0	0	0	0	234
(U) PMC BLI#464100 PES	0	0	993	99	0	0	0	1092
(U) Related RDT&E: Not Applicable.								
(U) D. ACQUISITION STRATEGY:								
TFAS: Program received a MS A decision last year and has completed the Concept Exploration phase consisting of Analysis of Alternatives and industry concept studies. These activities were conducted with start up funds provided by the functional, M&RA. Based on these studies TFAS is currently refining its acquisition strategy and documentation in order to develop a MS B decision brief. This decision will allow for TFAS system design and development starting in FY02. In keeping with Clinger-Cohen, Act TFAS strategy will design to the first Basic Capability Package addressed with an anticipated fielding of this package in early FY03. Remaining Capability Packages will begin system design concurrently with the initial package and developed as block upgrades to the TFAS program in the FYDP.								
MCTFS: In accordance with the Clinger-Cohen Act, a Business Process Review for the MCTFS program was conducted and it was determined that SELMS functionality should be included in the UD/MIPS program. While this did not decrease the funding requirement it decreased the requirement to maintain two different programs with two different contractors; therefore providing future cost savings in FY04 once SELMS is fully integrated within the UD/MIPS program. Current development and design is conducted concurrently with UD/MIPS and MCTFS program software releases. As such, the funds previously programmed for SELMS have been added to the MCTFS Program funding line.								
SDE - MS 0 was approved September 2000. The Shared Data Environment uses an evolutionary approach to development. Individual components will be ordered and implemented. The SDE program will use a lead integrator and up to three other vendors to supply discreet components. The contracts will be competitively awarded through GSA schedules. The contact will be for a base period with options for four additional years.								
(U) E. SCHEDULE PROFILE: Not Applicable.								

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Exhibit R-3 Cost Analysis							DATE: February 2002						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E, N /BA 5 Eng & Mfg Development			0605013M Marine Corps Information Technology				C2906 Marine Corps Information Technology DEV/MOD						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Method & Type	Activity & Location	PY s Cost	FY 01 Cost	FY01 Award Date	FY 02 Cost	FY02 Award Date	FY 03 Cost	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development												0.000	
Ancillary Hardware Development												0.000	
Systems Engineering												0.000	
Licenses												0.000	
Tooling												0.000	
GFE												0.000	
Award Fees												0.000	
SDE	FFP/O	MCSC, Quantico, VA		1.840	07/01					Continuing	Continuing		
SDE	TBD	TBD				4.150	01/02	6.609	01/03	Continuing	Continuing		
AIT	WR	SPAWAR, Chesapeake, VA		0.425	12/00			0.298	01/02	0.298	01/03	Continuing	Continuing
PES	TBD	CSC, Dumfries, VA				1.238	01/02	0.496	01/03	Continuing	Continuing		
MCTFS	TBD	TBD				0.844	01/02			Continuing	Continuing		
TFSMS	FFP	KPMG, Sacramento, CA		2.362	08/01	2.744	01/02	0.124	01/03	Continuing	Continuing		
FIMS II	FFP	ANRDNA		1.200	06/01								
IMS	FFP	MCSC, Quantico, VA		0.166	02/01							0.166	
TIGER	TMC	MCSC, Quantico, VA		0.408	05/01							0.408	
TFAS	TBD	TBD				0.652	01/02	0.225	01/03			0.877	
ONR HOLD				0.134									
Subtotal Product Development			0.000	6.535		9.926		7.752		0.000		24.213	
Remarks:													
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	
Development Support Equipment												0.000	
Software Development												0.000	
Training Development												0.000	
Integrated Logistics Support												0.000	
Configuration Management												0.000	
Technical Data												0.000	
GFE												0.000	
SDE										Continuing	Continuing		
SDE	LOF	MCSC, Quantico, VA				0.608	01/02			Continuing	Continuing		
TFAS	TBD	TBD										0.000	
Subtotal Support			0.000	0.000		0.608				Continuing	Continuing		
Remarks													

CLASSIFICATION:

Exhibit R-3 Cost Analysis							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 5 Eng & Mfg Development			PROGRAM ELEMENT 0605013M Marine Corps Information Technology				PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology DEV/MOD					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Method & Type	Activity & Location	PY s Cost	FY 01 Cost	FY01 Award Date	FY 02 Cost	FY02 Award Date	FY 03 Cost	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
SDE	FFP	MCSC, Quantico,VA		0.150	12/01					Continuing	Continuing	
TFAS	TBD	TBD				0.100	12/01	0.152	12/02		0.252	
TFSMS	TBD	TBD		0.150	07/01	0.150	12/01				0.300	
Subtotal T&E			0.000	0.300		0.250		0.152		0.000	0.702	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	FY03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
TFAS	TBD	TBD				0.150	01/02	0.175	12/03		0.325	
Subtotal Management			0.000	0.000		0.150		0.175		0.000	0.325	
Remarks:												
Total Cost				6.835		10.934		8.079		Continuing	Continuing	

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:
February 2002

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY					NAVY INFO TECH DEV/MOD 0605013N					
BA-5										
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	0.000	38.580	59.944	43.213	30.497	16.183	8.674	8.748	CONT.	CONT.
AAUSN IT 52901	0.000	4.334	3.188	1.338	1.340	1.339	1.338	1.340	CONT.	CONT.
SPAWAR IT 62907/X2905/X3042/X3054/X9088/9089	0.000	24.146	16.320	6.277	2.344	1.366	0.813	0.786	CONT.	CONT.
BUPERS IT L2905	0.000	3.843	13.551	13.288	20.047	6.841	0.000	0.000	CONT.	CONT.
NAVSEA IT S2904	0.000	4.924	7.944	4.719	4.415	4.277	4.134	4.169	CONT.	CONT.
NAVAIR IT W2903	0.000	1.333	4.074	2.478	2.351	2.360	2.389	2.453	CONT.	CONT.
NAVSUP IT T3005/T3038	0.000	0.000	14.867	15.113	0.000	0.000	0.000	0.000	0.000	1.000

A. (U) Mission Description and Budget Item Justification

PROJECT 52901 - This RDT&E Project funding is, in part, for contract labor support to enhance Standard Labor Distribution Collection and Data Application (SLDCADA) to encompass the Time and Attendance requirements of aviation depots and shipyards and for the Navy Facilities Asset Data Base (NFADB).

PROJECT 62907 - This project will provide an automated information system to track, record, report, and manage aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. The program will track and identify obligations reported in relation to the FHP.

PROJECT X2905 - SPAWAR IT

PROJECT X3042 - Defense Productivity Software Initiative

PROJECT X3054 - Web Enabling

PROJECT X9088 - SPAWAR ITC Enterprise Management

PROJECT X9089 - Secure Interactive Distributed Learning

PROJECT I2905 - Personalized Recruiting for Immediate and Delayed Enlistment (PRIDE) system is an interactive, on-line application that provides the Navy with an orderly and efficient mechanism for channeling accessions into required skill areas and controlling the reservation process. Each day PRIDE supports over 400 users in 71 geographical locations and is critical to fleet readiness.

PROJECT S2904 - This project consists of funding for Information Technology (IT) support at NAVSEA Headquarters (HQ). It includes modifications/enhancements to IT systems within Headquarters such as: Ships Configuration Logistics Support Information Systems (SCLISIS), Command Document Management System (CDMS) and Integrated Class Maintenance Plans (ICMP). This funding also supports modification to existing software, hardware changes, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure. The NAVSEA HQ network infrastructure architecture requires the development, analysis and testing of IT prototypes, such as Remote Access and Data Management. Also supported is software development and upgrades for IT systems and infrastructure, to include COTS software packages/systems; developmental testing and initial operational test and evaluation required prior to system acceptance/approval.

PROJECT S9090 - Total Fleet Support System

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY	BA-5	R-1 ITEM NOMENCLATURE NAVY INFO TECH DEV/MOD 0605013N
<p><u>PROJECT W2903</u> - Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) provides a central Navy aviation logistics database and Management Information System (MIS) compliant with Computer Aided Logistics Support (CALs) and Defense Information Infrastructure Common Operating Environment (DIICOE) for making improved decisions affecting aircraft logistics acquisition, readiness, safety, configuration management, and logistics/engineering support for the CNO Air Warfare Division. The Office of the Secretary of Defense (OSD) has certified NALDA as the central Naval aviation upline Integrated Logistics Support (ILS) data system. This project also includes the Configuration Management Information System is DoD's standard software system for complete and integrated configuration management of weapon systems from acquisition to disposal.</p> <p><u>PROJECT T3005</u> - National Defense Warehouse.</p> <p><u>PROJECT T3038</u> - E-Business</p>		

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EXHIBIT R-2, RDT&E Budget Item Justification			DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY	BA-5	NAVY INFO TECH DEV/MOD	0605013N	
B. Program Change Summary	FY 2001	FY 2002	FY 2003	
(U) FY 2002 President's Budget:	32.159	49.332	43.213	
(U) Appropriated Value:	29.259	60.233	0.000	
(U) Adjustments to FY 2001/2002 Appropriated Value/FY 2002 President's Budget:	9.321	-0.289		
(U) FY 2003 Pres Budget Submit	38.580	59.944	43.213	
FY01: (+\$5M) Web Enabling; Defense Productivity Software Initiative (+3.092) and (+1.229) other minor adjustments.				
FY02: (-.289) Minor adjustments				
FY03: Not Applicable				
Schedule: Not Applicable				
Technical Not Applicable				

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EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N / BA 5	NAVY INFO TECH DEV/MOD 0605013N				AAUSN IT / 52901					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	4.334	3.188	1.338	1.340	1.339	1.338	1.340	0.000	14.217
RDT&E Articles Qty										
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>This RDT&E Project funding is, in part, for contract labor support to enhance the Standard Labor Data Collection and Distribution Application (SLDCADA) to encompass the Time and Attendance requirements of aviation Marine Corps Logistics depots and shipyards. SLDCADA was selected in April 1999 to be deployed as the Department of Navy standard time and attendance system. SLDCADA met 86% of all Departmental claimancy requirements, was Y2K compliant, had Common Operating Environment (COE) certification and interfaced with all of the legacy payroll and financial management systems. SLDCADA will satisfy the requirements for a Clean Financial Statement.</p> <p>In 1997 a Deputy Secretary of Defense directive was issued calling for paper-free acquisition processes by 1 January 2000. While the Navy has made significant strides toward this goal, additional capabilities are required. The ASN(RD&A) established the PEO for Acquisition Related Business Systems (ARBS) to manage this major initiative within the DON. While individual claimants are self-financing their specific commands' paper free initiatives, this funding will be used by the PEO office for "Enterprise" (i.e., Navy-wide) paper free programs.</p> <p>In addition, funds are necessary to support software modifications to bring DON standard systems into compliance with federal accounting standards in accordance with the Federal Financial Management Improvement Act of 1996 and the Chief Financial Officer's Act of 1990.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: SLDCADA Production Processing Centers established at DISA San Diego and Mechanicsburg, hardware procured for Europe and PAC, Network Operations/Development Center established at NAVSEALOGCEN, Det Yorktown. By 1 Oct 2001, SLDCADA deployed to 52% of DON civilians; anticipate DON-wide fielding by the end of FY02 with exception of shipyards and depots and ERP demo sites. Initial ERP/SLDCADA interface requirements captured for shipyards and Navy depots.</p> <p>Paperless Acquisition accomplishments include new development for the Universal Interface and Procurement Request (PR) Builder software used as part of the DoD End to End Procurement Process. Funding was also used for Integrated Digital Environment (IDE) and eProcurement Pilots. The automated on-line invoicing system was activated as required by the FY 2001 Authorization Act.</p> <p>2. FY 2002/03/04 PLAN: Complete deployment of SLDCADA, including modifications for NWCf ERP/SLDCADA interface at shipyards and Navy depots, and for Marine Corps logistics bases. Complete Sybase to Oracle conversion at legacy SLDCADA sites. SLDCADA Production Processing Centers will be established in Europe and PAC. Migration from timekeeper to employee desktop processing using web-enabled SLDCADA. Initiate paperless capture of backup leave data (jury duty, active duty, maternity leave) and barcode capture of labor data at industrially funded sites. Obtain Federal Financial Management requirements compliance from Naval Audit Service and independent source.</p> <p>Paperless acquisition will continue implementation of electronic processing of invoices and claims and tasks to comply with Defense Acquisition Workforce Improvement Act (DAWIA) mandates, acquisition reform tasks such as knowledge management, and overall DOD acquisition strategic planning.</p>										

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2002
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5	PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N	PROJECT NAME AND NUMBER AAUSN IT / 52901
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(U) PROGRAM CHANGE SUMMARY	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
FY 2002 President's Budget:	0.000	2.642	3.216	1.380
FY 2001 Execution Adjustments	0.000	-0.024	0.000	0.000
FY 2003 DON Budget:				
Paperless Acquisition Funding	0.000	1.783	0.000	0.000
SBIR Reduction	0.000	-0.067	0.000	0.000
IT Infrastructure Efficiencies	0.000	0.000	0.000	-0.034
Congressional Adjustments				
SEC. 8123 Mgmt Reform	0.000	0.000	-0.028	0.000
Inflation Adjustment	0.000	0.000	0.000	-0.008
FY 2003 President's Budget	0.000	4.334	3.188	1.338

CHANGE SUMMARY EXPLANATION:

- (U) FUNDING: FY 2002 Funding decrease a result of the One-Time plus up in support of Paperless. Decrease in funding in FY 2003 is a result of the completion of SLDCADA R&D efforts.
- (U) SCHEDULE: NOT APPLICABLE.
- (U) TECHNICAL: NOT APPLICABLE.

B. OTHER PROGRAM FUNDING SUMMARY	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total
O&M,N Civ Manpower & Prog Mgmt (4A3M)	5.628	8.610	11.969	9.503	10.520	0.000	0.000	0.000	0.000	46.230
O&M,N Acq and Prog Mgmt (4B3N)	0.000	8.225	9.518	10.840	6.418	2.575	2.152	2.164	0.000	41.892
O&M,MC (reimbursable)	1.200	.000	.000	.000	.000	0.000	0.000	0.000	0.000	1.200
OP, N BA-7 Command Supt Equip (BLI 810600)	10.185	2.197	1.299	0.343	1.419	0.000	0.000	0.000	0.000	15.443

C. ACQUISITION STRATEGY:

FY99-FY01 funds buy Sun 6500/4500 servers and Oracle software using GSA competitive bids/ existing Blanket Purchase Agreements (BPAs). Developmental ADPE installed at NAVSEALOGCEN Det Yorktown in FY00, production equipment operationally installed in DISA San Diego and Mechanicsburg in FY00, and in Europe/PAC in FY02. Operational support deployed to 56% of DON civilians in FY01. Funds in FY02 used to achieve Security compliance. Investment funds in FY03-04 initiate implementation of paperless capture of time and attendance supportive documentation and barcode start/stop time data capture of piecework for labor cost distribution; buys will use GSA competitive schedule/existing BPAs. Contract labor for requirements definition, design, programming, testing, training development, data base conversion and load, training development and delivery, equipment installation, systems deployment and operations will be procured off existing BPAs.

D. SCHEDULE PROFILE: UNDER DEVELOPMENT.

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N / BA 5			NAVY INFO TECH DEV/MOD 0605013N			AAUSN IT / 52901						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Electronic Document Access	GSA	KPMG, Wash DC		3.157		1.799		1.338		5.357	11.651	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.157		1.799		1.338		5.357	11.651	
Remarks:												
Development Support Equipment											0.000	
Software Development	IDIQ	Andrulis	0.000	0.842	10/00	1.389	10/01	0.000		0.000	2.231	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.842		1.389		0.000		0.000	2.231	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N / BA 5			NAVY INFO TECH DEV/MOD 0605013N				AAUSN IT / 52901					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	RNTFRW	NAVFACIT, Pt Hueneme, CA		0.335	10/00						0.335	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.335		0.000		0.000		0.000	0.335	
Remarks:												
Total Cost			0.000	4.334		3.188		1.338		5.357	14.217	
Remarks:												

R-1 SHOPPING LIST - Item No. 145 - 7 of 145 - 40

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDTE,N/BA 5		Navy Information Technology Dev/Mod 0605013N			COMNAVRESFOR IT 62907					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		2.542	2.824	4.070	1.349	1.366	0.813	0.786	Continue	Continue
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>NOTE: FY01 funding Includes a BTR for New Order Writing (NOW) system efforts (+1.984). These efforts were funded in FY00 and prior with O&M,NR fund.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Funding is provided to modernize legacy software programs (e.g., COBOL, FORTRAN, etc.) and flat-file databases with fourth-generation language software and relational database architectures. Web-enabling enhancements for several programs is provided. FORECAST: This effort supports the tracking, recording, reporting, and managing of aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. CVAOS: This system supports the Commander, Naval Air Reserve Force with automated tools for scheduling and coordinating SELRES augment unit personnel fulfilling carrier operations requirements. JALIS: This system provides an airlift data collection and analysis system for the purpose of airlift and aircraft management. JALIS supports the objectives and strategies presented in the DoD Transportation Corporate Information Management (CIM) Strategic Plan and Enterprise Integration (EI) Implementation Strategy as directed for DoD transportation management responsibilities in the USTRANSCOM Joint transportation CIM Center (JTCC) Abbreviated Integration Decision Paper (IDP) for the JALIS. NOW: This system will improve order writing capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of Reservist response with timely receipt of orders and travel arrangements. Reserve retention will improve as Reservists can submit their own orders and check its status. TFMMS: This system is a classified system. It is the Navy's single authoritative source of activity data and military and civilian manpower data including requirements and end strength authorizations.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: FORECAST: Developed an enhanced, Web-based automated information system to track, record, report, and manage aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. The program tracks and identifies obligations reported in relation to the FHP. CVAOS: Developed an enhanced Web-enabled software program that schedules and coordinates SELRES personnel fulfilling carrier operations requirements. JALIS: Began developing a Web-enabled application for airlift data collection and analysis system. This system provides on-demand scheduling fo operational support aircraft. NOW: Began developing a new order writing system to improve order writing capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of Reservist response.</p> <p>2. FY 2002 PLAN: JALIS: Continue developing a Web-enabled application for airlift data collection and analysis system. This system provides on-demand scheduling fo operational support aircraft. Unit and integration testing continues. User acceptance testing will commence. Upon user approval and acceptance of the web-enabled application, deployment efforts will begin. NOW: Continue developing a new order writing system to improve order writing capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of Reservist response. Unit and integration testing continues.</p> <p>3. FY 2003 PLAN: JALIS: WEB-enabling development will be completed and if necessary, deployment efforts will continue. Unit and integration testing continues. NOW: Continue developing a new order writing system to improve order writing capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of Reservist response. Unit and integration testing continues. Engineering Changes Proposals (ECP) to software implemented. TFMMS: Develop short- and long-term computer models that will forecast Navy military and civilian manpower requirements while balancing fleet manning needs.</p> <p>(U) PROGRAM CHANGE SUMMARY: FY01: Section 8086 .7% Pro-rata Reduction (-4K); Government-Wide Recission: PL 106-554, sec. 1403 (-1K); FY01 SBIR Apr-27-01 (-16K); BTR NOW (+1.984M); Navy Miscellaneous Adjustment (-5K). FY02: Section 8123: Management Reform Initiative (-25K).</p>										

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N BA 5			NSIPS 0605013N				COMNAVRESFOR 62907					
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support Equipment		Various						0.300	10/01		0.300	
Software Development		Various		2.373	10/00	2.614	10/01	3.308	10/02		8.295	
Training Development											0.000	
Integrated Logistics Support		Various		0.079	10/00	0.050	10/01	0.050	10/02		0.179	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	2.452		2.664		3.658		0.000	8.774	
Remarks:												

Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT 0605013N			PROJECT NAME AND NUMBER						
RDT&E, N			NSIPS Dev/Mod			COMNAVRESFOR 62907						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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		Various		0.050	10/00	0.050	10/01	0.100	10/01		0.200	
Operational Test & Evaluation		Various				0.100	10/01	0.050	10/02		0.150	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.050		0.150		0.150		0.000	0.350	
Remarks:												
Contractor Engineering Support		Various						0.252	10/01		0.252	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel		Various		0.040	10/00	0.010	10/01	0.010	10/02		0.060	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.040		0.010		0.262		0.000	0.312	
Remarks:												
Total Cost			0.000	2.542		2.824		4.070		CONT	9.436	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N BA-5		NAVY INFO TECH DEV/MOD 0605013N				SPAWAR Web Enabling X3054				
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		5.000	5.270	2.207	0.995	0.000	0.000	0.000	0.000	13.472
RDT&E Articles Qty										
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This effort supports VCNO initiative of 28 Aug 2000 directing all programs to move rapidly to a web-enabled environment. Web-enabling the NTCSS applications will allow afloat and ashore users to access the applications from any workstation with a web browser. This provides the foundation for synchronized data replication allowing labor intensive tasks to be moved ashore from ships and expeditionary units.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. FY 2001 ACCOMPLISHMENTS: Developed migration plan for NTCSS Force and Unit applications to a Web environment. 2. FY 2002 PLAN: Design, develop, and test web front end for all NTCSS applications. 3. FY2003 PLAN: Continue development and testing of web front end for the remaining NTCSS applications. <p>(U) PROGRAM CHANGE SUMMARY: FY01: ATR for Web Enabling (+5,000K) FY02: Section 8123: Management Reform Initiative (-47K); Section 8032: FFRDC (-37K).</p>										

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N			SPAWAR Web Enabling X3054						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development		Various		0.500	10/01						0.500	
Ancillary Hardware Development											0.000	
Systems Engineering		Various		0.400	10/01	0.180	10/01	0.150	10/02		0.730	
Licenses		Various		1.000	10/01	0.500	10/01	0.400	10/02		1.900	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.900		0.680		0.550		0.000	3.130	
Remarks:												
Development Support Equipment											0.000	
Software Development		Various		2.900	11/01	3.758	10/01	1.207	10/02		7.865	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data		Various				0.250	10/01	0.100	10/02		0.350	
GFE											0.000	
Subtotal Support			0.000	2.900		4.008		1.307		0.000	8.215	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5			PROGRAM ELEMENT NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER SPAWAR Web Enabling X3054						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various		0.200	11/01	0.410	10/01	0.150	10/02		0.760	
Operational Test & Evaluation		Various				0.172	10/01	0.200	10/02		0.372	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.200		0.582		0.350		0.000	1.132	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	5.000		5.270		2.207		0.000	12.477	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N				PROJECT NAME AND NUMBER Human Resource Enterprise X2905				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	13.512	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.512
RDT&E Articles Qty										

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 The Human Resource Enterprise Strategy is identified in Section 8147 of the 1999 Defense Appropriations Act. Financial consideration for this strategy is spelled out in the House Conference Report H.R. 4576. H.R. 4576 also identifies funding for the Distance Learning IT Center at California State University, San Bernadino. This collaborative effort will increase the return on investment for training dollars expended and expand the use of distributed learning to reduce resident training time.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS: Initiated RSTARS-RAMIS and SPAWAR ITC portal development as part of the Human Resource Enterprise Strategy. Distance Learning IT assessment, analysis and design.
2. FY 2002 PLAN: NOT APPLICABLE.
3. FY2003 PLAN: NOT APPLICABLE.

(U) PROGRAM CHANGE SUMMARY:
 FY01: Congressional Plus-Up for Human Resource Enterprise Strategy (+9,000); Congressional Plus-up for Distance Learning IT Center Cal State Univ. (+5,000K); Section 8086: .7% Pro-Rata Reduction (-98K). Government -Wide Recission: PL 106-554, Sec. 1403 (-30K). SBIR Assessment (-360K).

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER Defense Software Productivity Initiative (DSPI) X3042					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		3.092	2.775	0.000	0.000	0.000	0.000	0.000	0.000	5.867
RDT&E Articles Qty										

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This RDT&E Project was a new start in FY01 to establish a National Institute for Systems Test and Productivity (NISTP) at the University of South Florida to implement a Defense Science Board Software Task Force report recommendation for an initiative to implement emerging techniques for developing and testing of large scale DOD software programs. The goal is to create a research and development environment, in collaboration with industry and government, to evaluate and improve software productivity tools and techniques and provide meaningful expert support to Navy software projects.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

(U) (\$3.092) Initiated research to identify, select, and aggregate software test and productivity tools and develop project metrics for determining/tracking improvements on actual projects. Produced summaries of methods, techniques, and practices, established web site, and conducted a major conference. Initiated program support and transition approaches to SPAWAR integrated large scale software development and test program.

2. FY 2002 PLAN:

(U) (\$2.775) Continue - Second year of the initiative research to identify, select, and aggregate software test and productivity tools and develop project metrics for determining/tracking improvements on actual projects. Produce summaries of methods, techniques, and practices, conduct industry/academia/military web site, and a major follow-on conference. Provide program support and transition approaches to SPAWAR integrated large scale software development and test program.

3. FY 2003 PLAN: N/A

(U) PROGRAM CHANGE SUMMARY:

FY01: Section 8086: .7% Pro-Rata Reduction (-22K). Government -Wide Recission: PL 106-554, Sec. 1403 (-7K). SBIR Assessment (-79K).
 FY02: Defense Software Productivity Initiative (+\$2,800K), Section 8123: Management Reform Initiative (-25K)

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N			Defense Software Productivity Initiative (DPSI) X3042						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	Grant	U. of So FI	0.000	2.801	06/01	2.508	03/02	0.000	N/A	N/A	5.309	N/A
	Various	Various	0.000	0.291	Various	0.267	Various	0.000	N/A	N/A	0.558	N/A
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.092		2.775		0.000		0.000	5.867	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5			PROGRAM ELEMENT NAVY INFO TECH DEV/MOD 0605013N				PROJECT NAME AND NUMBER Defense Software Productivity Initiative (DPSI) X3042					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	3.092		2.775		0.000		0.000	5.867	
Remarks:												

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N				PROJECT NAME AND NUMBER SPAWAR ITC Enterprise Management X9088				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.000	4.460	0.000	0.000	0.000	0.000	0.000	0.000	4.460
RDT&E Articles Qty										
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The SPAWAR Information Technology Center (ITC), New Orleans, wil develop a comprehensive e-Business architecture (proposal for a Navy Business Systems Enterprise Architecture (NBSEA)) and Technical Reference Model for web technology that documents the Enterprise Management technical philosophy and approach; a comprehensive Continuation Of Operations (COOP) Framework for event planning and disaster recovery in a Web-based operational environment; a concept of operations and migration methodology for retirement of legacy systems and/or timely and successful development and migration of Web-based applications; and a process guide for implementing e-Business systems at the SPAWAR ITC.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. FY 2002 PLAN: Develop and design a comprehensive e-Business architecture for migration of legacy systems to Web-based applications. 2. FY2003 PLAN: NOT APPLICABLE. <p>(U) PROGRAM CHANGE SUMMARY: FY02: Congressional Plus-Up for SPAWAR ITC Enterprise Management (+4,500); Section 8123: Management Reform Initiative (-40K).</p>										

Exhibit R-2a, RDT&E Project Justification

R-1 SHOPPING LIST - Item No. 145 - 19 of 145 - 40

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N				PROJECT NAME AND NUMBER Secure Interactive Distributed Learning (SIDL) X9089					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	0.000	0.991	0.000	0.000	0.000	0.000	0.000	0.000	0.991
RDT&E Articles Qty											

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

To keep pace with fast moving changes in the Navy's technology, education and training must be available at more than the traditional classroom setting. This effort enhances current distance learning technology by developing a more realistic setting for education and training. Most distance learning is a one-way stream confined by bandwidth and cost. This R&D effort will bring to the Navy a secure, cost-effective technology for the more realistic "give and take" experiences in the classroom.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2002 PLAN: Develop and design a more robust, secure, cost-effective technology for distance learning.
2. FY2003 PLAN: NOT APPLICABLE.

(U) PROGRAM CHANGE SUMMARY:

FY02: Congressional Plus-Up for Secure Interactive Distributed Learning (+1,000); Section 8123: Management Reform Initiative (-9K).

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2, RDT&E Project Justification						DATE: February 2002																													
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																														
RDT&E, N BA-4		NAVY INFO TECH DEV/MOD 0605013N			BUPERS IT EMPRS - L2095																														
COST (\$ in Millions)			FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																								
Total PE Cost			0.000	5.341	13.288	20.047	6.841	0.000	0.000		45.517																								
RDT&E Articles Qty																																			
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Defense Personnel Records Imaging System-Electronic Military Personnel Records System (DPRIS-EMPRS) is an electronic document/image based system that serves as the repository for all DON official military personnel record images. It supports retired, active, and reserve components of military personnel in the functional areas of selection board operations, casualty assistance, mobilization, and other military personnel record management functions. In 1995 an Optical Imaging System was developed to replace the old microfiche based system. Insufficient funding led to omitted, necessary capabilities/requirements and a system with obsolete technologies.</p> <p>Due to critical system deficiencies the resource sponsor and FMB provided funding for reengineering starting in FY-02. Although, reengineering was fully funded throughout the FYDP, the recent IT Infrastructure Mark (#65284) against RDT&E, O&M,N and OP,N appropriations, equating to a 21% reduction in the budget from FY03-FY07, has forced a reassessment of program planning. The current plan is to continue with reengineering while developing other strategies for accomplishing our mission and vision with the reduced program funding profile. The reengineered system is scheduled to reach Full Operational Capability (FOC) 1st Qtr/FY06.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> FY 2001 Accomplishments: N/A FY 2002 PLAN: <ul style="list-style-type: none"> (\$3,767K) Stabilization/Sustainment of Legacy System. <ul style="list-style-type: none"> (\$50) Program Management Office travel associated with stabilization of current system and re-engineering of new system. (\$45) Purchase of hardware equipment for the technical refreshment of the development, test, and evaluation environment. (\$3,672) Program Management Office and development contract services to support stabilization of current system, development of software and hardware system interface between DPRIS-EMPRS and OSD activities, and NAVFIT initiative (interface NAVFIT with DPRIS-EMPRS). (\$1,574) Reengineering - Concept Exploration - Program Management Office and development contract services to support re-engineering processes (business analysis, R&D, business design). FY 2003 PLAN: <ul style="list-style-type: none"> (\$4,360) Sustainment of Legacy System <ul style="list-style-type: none"> (\$25) Program Management Office travel associated with stabilization of current system and re-engineering of new system. (\$46) Purchase of hardware equipment for the technical refreshment of the development, test, and evaluation environment. (\$4,289) Program Management Office and development contract services to support stabilization of current system, development of software and hardware system interface between DPRIS-EMPRS and OSD activities, and NAVFIT initiative (interface NAVFIT with DPRIS-EMPRS). (\$8,928) Reengineering - Component Advanced Development <ul style="list-style-type: none"> (\$3,628) Program Management Office and development contract services to support re-engineering processes (R&D, business design, development, testing, programming, and documentation). (\$800) Purchase of hardware and software maintenance service contracts on new IT equipment. (\$4,500) Purchase of IT equipment (hardware and software). <p>B. OTHER PROGRAM FUNDING SUMMARY:</p> <table border="1"> <thead> <tr> <th></th> <th>FY-01</th> <th>FY-02</th> <th>FY-03</th> <th>FY-04</th> <th>FY-05</th> <th>FY-06</th> <th>FY-07</th> </tr> </thead> <tbody> <tr> <td>OM&N</td> <td>12.580</td> <td>10.032</td> <td>7.421</td> <td>7.404</td> <td>7.297</td> <td>7.116</td> <td>7.343</td> </tr> <tr> <td>OPN</td> <td>0.000</td> <td>4.988</td> <td>1.783</td> <td>1.313</td> <td>7.795</td> <td>1.306</td> <td>6.027</td> </tr> </tbody> </table> <p>C. ACQUISITION STRATEGY: The current Acquisition Strategy is two-phased approach to Stabilize and Sustain current Engineering Development Model and to Reengineer the system.</p>													FY-01	FY-02	FY-03	FY-04	FY-05	FY-06	FY-07	OM&N	12.580	10.032	7.421	7.404	7.297	7.116	7.343	OPN	0.000	4.988	1.783	1.313	7.795	1.306	6.027
	FY-01	FY-02	FY-03	FY-04	FY-05	FY-06	FY-07																												
OM&N	12.580	10.032	7.421	7.404	7.297	7.116	7.343																												
OPN	0.000	4.988	1.783	1.313	7.795	1.306	6.027																												

CLASSIFICATION:

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D. SCHEDULE PROFILE: Reengineering

Fiscal Year	FY2001			FY2002			FY2003			FY2004			FY2005			FY2006			FY2007		
Quarter	II	III	IV	II	III	IV	II	III	IV	II	III	IV	II	III	IV	II	III	IV	II	III	IV
Milestones													MC	▽	▽	FOC					
Acquisitions				RFI	▽	RFP	▽	Award													
HW Deliveries									▽					▽			▽				
Technical Demos									Tech Demo 1	▽									Tech Demo 2		
SW Builds									V1.0	▽					▽	V3.0	▽			V3.1	
Legacy App Repl																				Old EMPRS	
Total budget				1.574M			8.928M			13.818M			0								

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Exhibit R-2, RDT&E Project Justification

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N BA-5

PROGRAM ELEMENT NAME AND NUMBER

NAVY INFO TECH DEV/MOD 0605013N

PROJECT NAME AND NUMBER

EMPRS L2095 PE - 0901220N

(U) PROGRAM CHANGE SUMMARY

FY 2001

FY 2002

FY 2003

FY 2002 President's Budget:

5.389

15.345

Appropriated Value:

0.000

0.000

Adjustment from FY 02 PresBudget:

0

0.048

2.057

FY 2003 DON Budget:

0

5.341

13.288

A. CHANGE SUMMARY EXPLANATION:

(U) FUNDING: FY02 Issue 67825 (Management Reform) reduction of \$48K. FY03 Issue 65284 (IT Infrastructure) reduction of \$1,981K and Issue 67825 (Management Reform) reduction of \$76K.

(U) SCHEDULE: See Schedule Profile.

(U) TECHNICAL: Under Development.

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)				DATE: February 2002								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT		PROJECT NAME AND NUMBER								
RDT&E, N BA-5		NAVY INFO TECH DEV/MOD 0605013N		EMPRS L2095 PE - 0901220N								
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	TBD	NPC Millington				0.045	1-Oct-01	9.109	Unkown			
Ancillary Hardware Development												
Systems Engineering	TBD	GSA Contractor/NPC Millington				1.694	1-Oct-01	1.254	1-Oct-02			
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		1.739		10.363				0.000
Remarks:												
Development Support Equipment												
Software Development	TBD	GSA Contractor/NPC Millington				1.310	1-Oct-01	1.672	1-Oct-02			
Training Development												
Integrated Logistics Support	TBD	GSA Contractor/NPC Millington				1.272	1-Oct-01	0.627	1-Oct-02			
Configuration Management	TBD	GSA Contractor/NPC Millington				1.020	1-Oct-01	0.626	1-Oct-02			
Technical Data												
GFE												
Subtotal Support			0.000	0.000		3.602		2.925				0.000
Total Cost						5.341		13.288				
Remarks:												

UNCLASSIFIED

EXHIBIT R-2, RDT&E Project Justification						DATE: February 2002																					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																							
RDT&E, N BA-5	NAVY INFO TECH DEV/MOD 0605013N			BUPERS IT PRIDE/NRAMS - L2905																							
COST (\$ in Millions)			FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																
Total PE Cost			3.843	8.210	0.000	0.000	0.000	0.000	0.000		12.053																
RDT&E Articles Qty																											
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Currently Navy Recruiting is supported by a variety of Information Systems Technologies, many of which are over 20 years old. The three primary systems used for classification are PRIDE, PORT, and RDS. These three are a series of programs written in Fortran and Cobol, which operate off of a mainframe in Mechanicsburg, PA. The data structures involved are difficult for users to work with and the support for the systems is dwindling as they age. In order to do data analysis, Navy Recruiting personnel are forced to download information into spreadsheets and other PC based databases in order to manipulate the data to provide reports and goaling trends. Field recruiters use two varieties of contact management programs, R-Tools and O-Tools for enlisted and officer recruiters respectively. These programs do not share data with one another, nor do they interface with the classification programs. Further, the classification programs do not interface with the Military Entrance Processing Command (MEPCOM) Integrated Resource System (MIRS), which means that data for recruiters must be reentered manually at least three times. The goal in the development of NRAMS (Navy Recruiting and Accessions Management System) is to create a single logical system for recruiting. This system will allow both officer and enlisted recruiters to view and manipulate data on potential recruits. Classifiers can use the same program to view and manipulate the same data and classify individuals into Navy fields. This same data will then be transferred electronically into the MIRS system at MEPCOM. At Recruiting Headquarters, analysts will be able to build reports and analyze data from the same system in use by field personnel. This single system will save man-hours in data reentry and transfer as well as provide more accurate and real-time information. It will also enable future improvements such as merging of the recruiter/classifier and the officer/enlisted recruiting roles.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS:</p> <p>(U) (\$600K) Completed initial down-select process; identifying 4 vendors to complete operational prototypes for evaluation in the final selection process.</p> <p>(\$3,243K) Conducting the final Source Selection for the NRAMS program. Contract award scheduled for 30 June 2001. Selected contractor will begin development immediately.</p> <p>2. FY 2002 PLAN:</p> <p>(U) (\$8,210K) Anticipate completion of development of initial module, replacing PRIDE, PORT, and RDS in 13 months from contract award, approximately 1 August 2002. An unfunded of \$73K remains.</p> <p>(U) (\$4,188K) Unfunded request submitted to continue further development of NRAMS, Build B, to provide further enhancements.</p> <p>B. OTHER PROGRAM FUNDING SUMMARY:</p> <table border="1"> <thead> <tr> <th></th> <th>FY-01</th> <th>FY-02</th> <th>FY-03</th> <th>FY-04</th> <th>FY-05</th> <th>FY-06</th> <th>FY-07</th> </tr> </thead> <tbody> <tr> <td>O&M,N</td> <td>3,872</td> <td>3,607</td> <td>4,549</td> <td>3,916</td> <td>4,068</td> <td>4,135</td> <td>4,199</td> </tr> </tbody> </table> <p>C. ACQUISITION STRATEGY: D. SCHEDULE PROFILE:</p>													FY-01	FY-02	FY-03	FY-04	FY-05	FY-06	FY-07	O&M,N	3,872	3,607	4,549	3,916	4,068	4,135	4,199
	FY-01	FY-02	FY-03	FY-04	FY-05	FY-06	FY-07																				
O&M,N	3,872	3,607	4,549	3,916	4,068	4,135	4,199																				

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		37288	DATE: February 2002	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER		
RDT&E, N BA-5	NAVY INFO TECH DEV/MOD 0605013N	BUPERS IT PRIDE/NRAMS - L2905		
(U) PROGRAM CHANGE SUMMARY	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	FY 2003
FY 2002 President's Budget:				
Appropriated Value:		5.420	7.000	0
Adjustment from FY 02 PresBudget:	0			
66220 .7% Pro Rata		-0.038		
68869 Gov Wide Rescission		-0.012		
63537 FY01 SBIR		-0.139		
64223 June 2001 BTRs		-0.105		
65563 ASN-FMB MYR BTRs		-1.283		
65768 Technical Adjustments			1.283	
FY 2003 OSD Budget:	0	3.843	8.283	
Adjustment from FY 03 OSD Budget				
67825 Sec 8123 Management Reform Init.			-0.073	
FY 2003 President's Budget	0	3.843	8.210	0
CHANGE SUMMARY EXPLANATION:				
(U) FUNDING:				
(U) SCHEDULE:				
(U) TECHNICAL:				

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N		BUPERS IT PRIDE/NRAMS L2905							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	TBD	NAVRESO/EO Millington		0.300	TBD	0.370	TBD					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.300		0.370		0.000	0.000	0.000		
Remarks:												
Development Support Equipment												
Software Development	TBD	NAVRESO/EO Millington		2.391	TBD	6.774						
Training Development	TBD	NAVRESO/EO Millington		0.082	TBD	0.106						
Integrated Logistics Support	TBD	NAVRESO/EO Millington		0.370	TBD	0.460						
Configuration Management	TBD	NAVRESO/EO Millington		0.400	TBD	0.500						
Technical Data												
GFE												
Subtotal Support			0.000	3.543		7.840		0.000	0.000	0.000		

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD PE: 0605013N			PROJECT NAME AND NUMBER NAVSEA IT DEV/MOD PROJECT S2904						
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
NAVSEA IT S2904/S9090 *		0.000	4.924	7.944	4.719	4.415	4.277	4.134	4.169	CONT.	NAV
RDT&E Articles Qty											

* Includes Congressional add for Total Fleet Support System

A. Mission Description and Budget Item Justification: This is not a new start. These funds were moved from O&M,N to RDT&E,N due to Congressional (HAC) direction and subsequent OUSD(C) guidance to adjust Information Technology (IT) budgeting. This program includes the funding for Information Technology (IT) support at NAVSEA HQ. This program includes the funding for Information Technology (IT) support at NAVSEA HQ. This includes modifications/enhancements to IT systems within Headquarters such as Ships Configuration Logistics Support Information Systems (SCLSIS), Command Document Management System (CDMS) and Integrated Class Maintenance Plans (ICMP). This funding also supports modification to existing software, hardware changes, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure. The NAVSEA HQ network infrastructure architecture requires the development, analysis and testing of IT prototypes, such as Remote Access and Data Management. Also supported is software development and upgrades for IT systems and infrastructure, to include COTS software packages/systems; developmental testing and initial operational test and evaluation required prior to system acceptance/approval.

B. Mission Description and Budget Item Justification: Total Fleet Support System - This is a new start. These funds are result of a Congressional plus up for the accelerated support of the Shared data and Real Time Knowledge Management elements of the Distance Support/Anchor Desk Program. This effort includes funding for Information Technology Development (ITD) support for the Distance Support (DS) integration focused on reducing Fleet support costs. This includes contractual program management and technical support, enhancements and integration of ITD systems, software, hardware changes, within the (DS) capabilities. It includes software development and upgrades for ITD systems and software, to include COTS software packages/systems and hardware. It also includes developmental testing and certification.

(U) Program Accomplishments and Plans:

Project S2904

FY 2001 PLAN:

(U) \$1.320 Miscellaneous Technical Support - Infrastructure Enhancement

(U) \$.118 Integration Class Maintenance Plans (ICMP)

(U) \$.050 Ships Configuration Logistics Support Information Systems (SCLSIS)

(U) \$2.010 Command Document Management System (CDMS)

(U) \$1.226 Various Software Development

(U) \$..200 Software Development Upgrades

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EXHIBIT R-2a, RDT&E Project Justification		DATE: Jan 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N	PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N	PROJECT NAME AND NUMBER NAVSEA IT DEV/MOD/Project S2904

FY 2002 PLAN:
 Project S2904
 (U) \$1.320 Miscellaneous Technical Support - Infrastructure Enhancement
 (U) \$.112 Integration Class Maintenance Plans (ICMP)
 (U) \$.255 Ships Configuration Logistics Support Information Systems (SCLSIS)
 (U) \$2.010 Command Document Management System (CDMS)
 (U) \$1.226 Various Software Development
 (U) \$.444 Software Development Upgrades
 Project S9090
 (U) \$2.577 Total Fleet Support System

FY 2003 PLAN
 (U) \$1.093 Miscellaneous Technical Support - Infrastructure Enhancement
 (U) \$.105 Integration Class Maintenance Plans (ICMP)
 (U) \$.211 Ships Configuration Logistics Support Information Systems (SCLSIS)
 (U) \$1.677 Command Document Management System (CDMS)
 (U) \$1.199 Various Software Development
 (U) \$.434 Software Development Upgrades

(U) PROGRAM CHANGE SUMMARY

FY2001 **FY2002** **FY2003**

FY2002 President's Budget:	5.171	5.415	4,719
Adjustment to:	-0.247	2.529	
FY2003 President's Budget:	4.924	7.944	4.719

B. (U) Other Program Funding Summary:

FY 2001 (-.247) other minor adjustments.
 FY 2002 (+2.577) Total Fleet Support System; (-.048) other minor adjustments.

C. (U) Acquisition Strategy: Under Development.

D. (U) Schedule:

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			0605013N			NAVSEA IT DEV/MOD/Project S2904						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development	Various	Various		0.120		0.190		0.190		CONT.	0.380	
Ancillary Hardware Development											0.000	
Systems Engineering											0.120	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.120		0.190		0.190		CONT.	0.500	
Remarks: Various is being used in the Contract Method & Type, plus Performing Activity & Location because of numerous project initiations and implementation.												
Development Support Equipment											0.000	
Software Development	Various	Various		0.401		0.513		0.582		CONT.	1.095	
Training Development											0.000	
Integrated Logistics Support											0.401	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.401		0.513		0.582		CONT.	1.496	
Remarks:												

R-1 SHOPPING LIST - Item No. 145 - 30 of 145 - 40

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N			PROGRAM ELEMENT 0605013N			PROJECT NAME AND NUMBER NAVSEA IT DEV/MOD/Project S2904						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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	Various	Various		1.372		1.606		1.234				CONT.
Operational Test & Evaluation				0.237		0.100		0.100				CONT.
Tooling												
GFE												
Subtotal T&E			0.000	1.609		1.706		1.334		0.000		CONT.
Remarks:												
Contractor Engineering Support	C/FP	Various		1.493		1.630		1.497				CONT.
Government Engineering Support												
Program Management Support	C/FP	Various		1.301		1.328		1.116				CONT.
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	2.794		2.958		2.613		0.000		
Remarks:												
Total Cost				4.924		5.367		4.719				
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME W2903 - NAVAIR IT/CMIS IT					
COST (\$ in Millions)		Prior Year Cost	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.333	4.074	2.478	2.351	2.360	2.389	2.453	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) provides a central Navy aviation logistics database and Management Information System (MIS compliant with Computer Aided Logistics Support (CALs) and Defense Information Infrastructure Common Operating Environment (DII COE) for making improved decisions affecting aircraft logistics acquisition, readiness, safety, configuration management, and logistics/engineering support for the CNO Air Warfare Division. The Office of the Secretary of Defense (OSD) has certified NALDA as the central Naval Aviation upline Integrated Logistics Support (ILS) data system. NALDA currently provides users with critically needed data access and analysis of maintenance, operations, safety, supportability, and readiness information. Funding is budgeted to support the services of system migration from legacy systems into NALDA IDE, and for development of the NALDA IDE data warehouse.

The Configuration Management Information System (CMIS) Program is DoD's standard software system for complete and integrated configuration management of weapon systems from acquisition to disposal. CMIS provides users with a common database infrastructure to ensure compatibility, quality, and consistency of CM processes and provides configuration managers and analysts the validated CM information necessary for accurate maintenance, spare procurements, reliability and safety analysis, and mission readiness. Funding is budgeted to support the services of rehosting and testing of COTS upgrades to ensure objective performance of CMIS is achieved.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2001 ACCOMPLISHMENTS:

(U) (\$1.333) NALDA - System migration from legacy configuration management systems into the DOD Configuration Management Information System (CMIS).

2. FY 2002 PLANS:

(U) (\$1.205) NALDA - System migration from legacy configuration management systems into the DOD Configuration Management Information System (CMIS) under Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) data warehouse development.

(U) (\$2.746) CMIS - Re-baseline CMIS Software to upgrade latest version of Oracle and evolve an open standard based interface to other systems.

(U) (\$.123) Portion of extramural program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 638.

3. FY2003 PLANS:

(U) (\$.124) NALDA - Testing of system migration from legacy configuration management systems into the DOD Configuration Management Information System (CMIS).

(U) (\$2.354) CMIS - Re-baseline CMIS Software to upgrade latest version of Oracle, and evolve an open standard based interface to other systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME W2903 - NAVAIR IT/CMIS IT																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border: none;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> <th style="text-align: right;">FY2003</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td style="text-align: right;">1.378</td> <td style="text-align: right;">4.109</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY02 President's Budget:</td> <td style="text-align: right;">-0.045</td> <td style="text-align: right;">-0.035</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td style="text-align: right;">1.333</td> <td style="text-align: right;">4.074</td> <td style="text-align: right;">2.478</td> </tr> </tbody> </table> <p>PROGRAM CHANGE SUMMARY:</p> <p>(U) Funding: The FY 2001 decrease of \$.045 million reflects a decrease of \$.047 million for a Small Business Innovative Research Assessment offset by an increase of \$.002 million to be used for migration of legacy systems to CMIS. The FY 2002 decrease of \$.035 million reflects a decrease of \$.036 million for an undistributed congressional reduction offset by an increase of \$.001 million for NMCI.</p> <p>(U) Schedule: Not applicable</p> <p>(U) Technical: Not applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable</p>				FY2001	FY2002	FY2003	(U) FY 2002 President's Budget:	1.378	4.109		(U) Adjustments from the FY02 President's Budget:	-0.045	-0.035		(U) FY 2003 President's Budget Submit:	1.333	4.074	2.478
	FY2001	FY2002	FY2003															
(U) FY 2002 President's Budget:	1.378	4.109																
(U) Adjustments from the FY02 President's Budget:	-0.045	-0.035																
(U) FY 2003 President's Budget Submit:	1.333	4.074	2.478															

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5		0605013N - Navy Information Technology Dev/Mod	W2903 NAVAIR/CMIS IT		
(U) D. ACQUISITION STRATEGY: Contractor services will be used to perform this work. Legacy configuration management systems will be migrated in CMIS under NALDA IDE in an Oracle environment.					
(U) E. SCHEDULE PROFILE:					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
<u>NALDA:</u>					
(U) Program Milestones		4-Q/01 - Complete migration of 3 med-large legacy systems to CMIS	4-Q/02 - System migration continues. Data warehouse started.	1-Q/03 - Complete system migration.	
(U) Engineering Milestones					
(U) T&E Milestones		4-Q/01 - Complete operational evaluation of CMIS after legacy system migrations	4-Q/02 - Complete operational evaluation of CMIS after migrations. Data warehouse evaluation.	2-Q/03 - Complete final testing of CMIS migration.	
(U) Contract Milestones			2-Q/02 Contract Award		
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>
<u>CMIS:</u>					
(U) Program Milestones			4-Q/02 - Software Release 5.2.4 Re-baseline CMIS SW to upgrade latest version of Oracle and evolve an open standard based interface to other systems.		
(U) Engineering Milestones			2-Q/02 TRB/CCB/CAT	2-Q/02 TRB/CCB/CAT	
(U) T&E Milestones			3 & 4-Q/02 TRR/FPT/BETA	3 & 4-Q/02 TRR/FPT/BETA	
(U) Contract Milestones			2-Q/02 Contract Award	2-Q/02 Contract Award	

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			Navy Information Technology Dev/Mod 0605013N			PU W2903 NAVAIR/CMIS IT						
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	To Complete	Total Cost	Target Value of Contract
Subtotal Product Development												
Remarks:												
SW Development (NALDA)	C/CPAF	Lockheed Martin		1.253	11/00	1.085	01/02	0.112	11/02	Continuing	Continuing	
Award Fee (10%) NALDA *	C/CPAF	Lockheed Martin		0.080	03/01	0.120	01/02	0.012	11/02	Continuing	Continuing	
SW Development (CMIS)	C/CPAF	Intergraph				2.746	01/02	2.354	11/02	Continuing	Continuing	
SBIR ASSESSMENT						0.123						
Subtotal Support				1.333		4.074		2.478		Continuing	Continuing	
Remarks: Funding will be used to migrate legacy configuration management systems into the DOD Configuration Management Information System (CMIS) under NALDA IDE in the Oracle environment, and rehosting and testing of COTS upgrades to ensure objective performance of the CMIS system is achieved.												
*The percentage of award fees for NALDA actually awarded in FY 2001 is 6%.												

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5 Engineering & Manufacturing

R-1 ITEM NOMENCLATURE

0605013N Navy IT DEV / MOD

COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE0605013N Cost		0.000	0.000	14.867	15.113	0.000	0.000	0.000	0.000	Continuing	Continuing
E-Business		0.000	0.000	14.867	15.113	0.000	0.000	0.000	0.000		
Quantity of RDT&E Articles	Not Applicable										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The DoN Electronic Business (eBusiness) Operations Office was established on 1 October 2000 to serve as a catalyst for implementing and integrating DON eBusiness efforts, and harnessing emerging uses of electronic business (both from within the whole of government as well as private industry), and making DON processes more efficient and effective. The Office provides a consistent and integrated management approach and facilitates the evolution to future technological solutions, a center of eBusiness innovation for the Navy and Marine Corps. The DON eBusiness Operations Office, as chartered by the Secretary of the Navy, is responsible for acting as the DON center for innovation as well as managing card programs and selected electronic transaction systems. Office responsibilities include:

- Act as clearinghouse for eBusiness best business practices and serve as an import/export agent, identifying industry and government innovations and broadcasting them DON-wide. Identify opportunities within DON to implement new eBusiness solutions and facilitate the integration of existing similar eBusiness initiatives.
- Provide consulting services for DON organizations implementing eBusiness solutions to include Information Assurance considerations and DON architecture and Interoperability standards.
- Support functional business process owners in developing eBusiness Implementation Plans
- Develop and administer a process to invest in pilot projects to foster the implementation of innovative eBusiness solutions throughout the Department.
- Manage all DON card programs, consolidate where appropriate, and evolve to use of future technological solutions to create efficiency and coordinate with DON customers to improve support from private sector financial institutions.
- Develop a comprehensive, outcome based metric collection and management program

(U)B. JUSTIFICATION OF BUDGET ACTIVITY: FY 02 E-Business funding was obtained by PBD 426 issued during the FY 02 OSD Budget Review. FY 03 funding was received by issue 64998 PBCG decision.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0605013N Navy IT Dev / Mod				T3038 E-Business						
COST (\$ in Millions)		Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		0.000	0.000	0.000	14.867	15.113	0.000	0.000	0.000	0.000	0.000	29.980
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> 1. FY 2000 ACCOMPLISHMENTS: Not Applicable 2. FY 2001 PLANS: Not Applicable 3. FY 2002 PLANS: Execute between 30 and 50 pilot projects. Pilot project execution consists principally of proof of concept approach. - (U) (\$14.867) 4. FY 2003 PLANS: FY03 funding of \$15.113M will be utilized to continue the effort of identifying opportunities within DoN to implement new eBusiness solutions and facilitate the integration of existing initiatives. - (U) (\$15.113) 												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																																																			
RDT&E, N / BA-5		0605013N Navy IT Dev / Mod			T3038 E-Business																																																			
<p>(U) B. PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY2000</th> <th style="width: 10%;">FY2001</th> <th style="width: 10%;">FY2002</th> <th style="width: 10%;">FY2003</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">14.867</td> <td style="text-align: center;">15.113</td> </tr> <tr> <td>(U) Adjustments from the FY 2001 President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">14.867</td> <td style="text-align: center;">15.113</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">14.867</td> <td style="text-align: center;">0</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 40px;">(U) Funding: FY 02 funding received by PBD 426 during FY 02 OSD Budget. FY 03 funding received by issue 64998 PBCG decision.</p> <p style="margin-left: 40px;">(U) Schedule: Not Applicable</p> <p style="margin-left: 40px;">(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"><u>Line Item No. & Name</u></th> <th style="width: 5%;">FY 2000</th> <th style="width: 5%;">FY 2001</th> <th style="width: 5%;">FY 2002</th> <th style="width: 5%;">FY 2003</th> <th style="width: 5%;">FY 2004</th> <th style="width: 5%;">FY 2005</th> <th style="width: 5%;">FY 2006</th> <th style="width: 5%;">FY 2007</th> <th style="width: 5%;">To Complete</th> <th style="width: 5%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Not Applicable</td> <td></td> </tr> </tbody> </table>											FY2000	FY2001	FY2002	FY2003	(U) FY 2001 President's Budget:	0	0	0	0	(U) Appropriated Value:	0	0	14.867	15.113	(U) Adjustments from the FY 2001 President's Budget:	0	0	14.867	15.113	(U) FY 2002 President's Budget Submit:	0	0	14.867	0	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	Not Applicable										
	FY2000	FY2001	FY2002	FY2003																																																				
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Not Applicable																																																								

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT Dev / Mod	PROJECT NUMBER AND NAME T3038 E-Business																																	
<p>(U) D. ACQUISITION STRATEGY: * An explanation of acquisition, management, and contracting strategies shall be provided for each project.</p> <p>(U) E. SCHEDULE PROFILE: * Include the program milestone chart that reflects Program Milestones, Engineering Milestones, T&E Milestones, and Contract Milestones for all years of the program, not just through budget years. The chart should display all planned major milestones and test and evaluation events, such as LRIP approval, Milestone III, IOC, Development Test Evaluation, and Operational Test and Evaluation for the total program by quarter showing both beginning and ending times. For non-acquisition programs, meaningful data should be provided.</p> <p>Program managers may choose to provide a milestone chart instead of completing this section. If a milestone chart is submitted, the following criteria must be met:</p> <ol style="list-style-type: none"> 1. Milestones displayed on the chart must support this budget. 2. The chart must be incorporated in this Excel file. <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2000</u></th> <th style="width: 15%; text-align: center;"><u>FY 2001</u></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 20%; text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">TBD</td> <td style="text-align: center;">TBD</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;">* Not required for Budget Activities 1, 2, 3, and 6.</p>							<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	N/A	N/A	TBD	TBD		(U) Engineering Milestones						(U) T&E Milestones						(U) Contract Milestones					
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																														
(U) Program Milestones	N/A	N/A	TBD	TBD																															
(U) Engineering Milestones																																			
(U) T&E Milestones																																			
(U) Contract Milestones																																			

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0605013N Navy IT Dev / Mod			T3038 E-Business						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development												0.000
Ancillary Hardware Development												0.000
Systems Engineering												0.000
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support Equipment												0.000
Software Development												0.000
Training Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
GFE												0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0605013N Navy IT Dev / Mod			T3038 E-Business						
Cost Categories (Tailor to WBS, or System/Item Requirements)	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						\$14.867		\$15.113			\$29.980	
Operational Test & Evaluation											\$0.000	
Tooling											\$0.000	
GFE											\$0.000	
Subtotal T&E			0.000	0.000		\$14.867		\$15.113			\$29.980	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			\$0.000	\$0.000		\$14.867		\$15.113		\$0.000	\$29.980	
Remarks:												

UNCLASSIFIED

Exhibit R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N
PROGRAM ELEMENT TITLE: Information Technology Development

(U) COST: (Dollars in Thousands)

Table with 10 columns: PROJECT NUMBER & TITLE, FY 2001 ACTUAL, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Row 1: DIMHRS* X3033, 0, 46,767, 51,297, 80,543, 50,620, 20,031, 0, Cont., Cont. Row 2: Total

* This project was transferred from PE 0605014S, Defense Human Resources Activity, beginning in FY02.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Defense Military Human Resources System (DIMHRS)(Pers/Pay) will be a single integrated, all Service, all Component military personnel and pay management and information system, supporting the complete military personnel life cycle through the full spectrum of military operations. The core will consist of common functions and appropriate interfaces to support Component/Service-unique functions. Military personnel functions support Active Duty, Retired, and Reserve Component personnel (and their families) throughout their entire military careers. Additionally, these functions support DoD-sponsored personnel during contingency and wartime operations. Individual Service business policies, practices, and processes will be examined and re-engineered, or combined with "best practice" solutions to satisfy DIMHRS (Pers/Pay) core functional requirements. These core functions address the personnel communities' support to: 1) meet the operator's mission requirements across the full spectrum of force mobilization and employment from peacetime to war, and 2) eliminate business policies and practices that create inequities among the Services and complicate processing. These core functions, while macro in nature, will be continuously validated to ensure the Program remains aligned with DoD and Joint warfighting strategies, objectives, and goals.

- 1. (U) FY 2001 PLAN: N/A
2. (U) FY 2002 PLAN: (46,767)

- Continue development of critical useful assets
• Finalize all Phase I activities for MAIS ACAT 1AM Program
• Initiate Phase II activities for MAIS ACAT 1AM Program

UNCLASSIFIED

Exhibit R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

- Conduct Source Selection activities for program Integration/Development
Continue R&D activities related to the COTS developmental software
Obtain Milestone II program approval

3. (U) FY 2003 PLAN: (51,297)

- Complete development, design, and build of critical Useful Asset (UA) 1
Initiate and finalize developer testing of completed DIMHRS modules
Perform Operational Assessment testing (OPTEVFOR) in accordance with the TEMP
Begin development of UA-2, 3, and 4.
Continue program Integration/Development efforts
Continue Phase II activities for MAIS ACAT 1AM Program

B. (U) PROGRAM CHANGE SUMMARY:

FY2002: Section 8123: Management Reform Initiative (-\$417K).

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

Table with 10 columns: Activity, FY 2001 ESTIMATE, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows include OPN# 2905, O&M,N, OP, DW, RDT&E, DW, O&M, DW.

UNCLASSIFIED

Exhibit R-2, FY 2003 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

D. (U) ACQUISITION STRATEGY:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Program Milestones		MS I October 00	MS II July 02	MS III June 03
Engineering Milestones	Sys Rqmts Review September 00	Sys Design Review June 01		
T&E Milestones				Developer/Assessment Testing March 03
Contract Milestones		COTS HR Contract March 01	Developer/Integrator July 02	

E. (U) SCHEDULE PROFILE:

See paragraph D above.

UNCLASSIFIED

Exhibit R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0605014N

PROJECT NUMBER: X3033

PROGRAM ELEMENT TITLE: Information Technology Development

PROJECT TITLE: DIMHRS

A. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 1)												
APPROPRIATION/BUDGET ACTIVITY:		PROGRAM ELEMENT: 0605014N										
RDT&E,N / BA 5												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Mission Product Development	CPIF	TBD, New Orleans, LA				6,858	07/02	22,964	10/02	Cont.	Cont.	Cont.
Prime Mission Product Development												
Government Engineering Support												
Engineering Supt Services												
Engineering Supt Services												
Engineering Supt Services												
Software Development	C/FP	PeopleSoft, Bethesda, MD				11,676	Option			28,000	39,676	39,676
OTHER CONTRACTS												
OTHER ACTIVITIES												
Subtotal Product Development						18,534		22,964		28,000	Cont.	Cont.

UNCLASSIFIED

Exhibit R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

B.(U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 2)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Science Engineering Associates, New Orleans, LA				25,533	Oct. 01	25,533	Oct. 02	Cont.	Cont.	Cont.
Government Engineering Support												
Subtotal Support						25,533		25,533				

UNCLASSIFIED

Exhibit R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 3)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation												
Developmental and Operational Test and Evaluation	WR	COMOPTEVFOR Washington, DC				100	01/02	200	10/02	Cont.	Cont.	Cont.
Developmental and Operational Test and Evaluation												
Subtotal T&E						100		200		Cont.	Cont.	Cont.

UNCLASSIFIED

Exhibit R-3, FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 4)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Booz-Allen & Hamilton, Mclean VA				2,600	Oct 01					
Program Management Support		TBD						2,600	Oct. 02	Cont.	Cont.	Cont.
Program Management Support												
Subtotal Management						2,600		2,600				
Total Cost						46,767		51,297				

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NAME AND NUMBER Joint Military Intelligence Program / 0605015N				PROJECT NAME AND NUMBER Joint Counterintelligence Assessment Group #53035					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Joint Counterintelligence Assessment Group		0.000	0.000	5.947	2.337	3.980	2.383	2.573	2.666	Continuing	Continuing

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Counterintelligence Assessment Group (JCAG) is tasked with developing and implementing an analysis center to support the protection of critical technology in the government. This activity responds to Deputy Secretary of Defense guidance to develop and operate such a capability to protect DoD critical technology programs from threats posed by foreign intelligence activities, foreign information operations, terrorist, and other clandestine or covert threats. The JCAG mission includes evolving analytic processes and techniques to take advantage of leading technologies, and produce horizontal critical technology profiles and risk assessments. These profiles and assessments provide the necessary information for the government to understand the extent to which critical technology may be exposed or unprotected, with information to support decisions on how to improve protection both within and across programs. Delays in establishing a capability to conduct horizontal analysis will directly impact/delay the government's ability to quantify the extent to which technology or information is at risk, and properly size responses or programs to mitigate this risk. By leveraging from the latest technologies, analysts will exploit massive databases with dynamic retrieval, analysis, and presentation tools for decision-makers to visualize the threats, vulnerabilities, and solution sets to the DoD critical technology protection mission.

OSD/C3I has asked for an acceleration of the program based on the current world situation and the security threat to national assets. The JCAG budget across the FYDP falls short of adequate funding for a collection and analysis activity of necessary depth for an effective program. An accelerated near-term capability will require increased funding in order to develop a revised and automated analytic approach with the depth of data necessary to produce near-term meaningful products. Further reductions in the budget will severely limit the program's ability to reach a minimum threshold of conducting analysis and developing horizontal information products useful to the decision process of protecting critical technology and US interests.

FY 2000 Accomplishments:

- Technology Beta site established. Site provides the capability to assess, integrate, and test the applicability of commercial and government technologies in supporting the JCAG mission of conducting analysis to support the protection of critical technology. Procured hardware, software, and infrastructure to support the effort.
- Operations Beta site established. Site allows analysts to evaluate potential analytical tools, evolve and improve analytical processes, procedures, and products by assessing and testing selected commercial and/or government technologies in an operational environment.

FY 2001 Accomplishments:

- Established the Initial Initial Operational Capability (I2OC) site. I2OC provides a capability to exploit the JCAG tools and data in a classified operational environment, identifying JCAG system design and operational problems and solutions before IOC, respond to dynamic, real world tasking, and produce technology protection products.
- Consolidated the Beta sites into a single Technology/Operations Beta site to assess, integrate, and test the applicability of technologies in conducting analysis to support the protection of critical technology; evolve analytic processes, procedures, and products by assessing these technologies in an operational environment; and implement Spiral Development process of hardware and software automation tools and capacity to support both JCAG and C3I initiatives.

FY 2002 Program:

- Completes the design and build out of the IOC site.
- Establishes JCAG IOC. Planned products include Horizontal Critical Technology Profiles, Horizontal Risk Assessments, and Tailored Information Products.
- Establishes JCAG Full Operational Capability (FOC). FOC will add a spiral development effort to insert new technologies, capabilities, and data sources into the JCAG Automated Information System (AIS) to provide refinement of JCAG products.
- Continues Technology/Operations Beta site activities to provide the capability to assess, integrate, and test the applicability of commercial and government technologies that support the JCAG mission, and provide to the analysts the ability to evaluate potential analytical tools and evolve analytical processes.

FY2003 Plan:

- Completes the build-out enhancements for Crystal Mall 2, Crystal Square 5 CIFA headquarters. Enhancement costs include floor plan architectures, construction planning, permit coordination, furniture lay-outs, and infrastructure wiring.
- Continues the spiral development effort to insert new technologies, capabilities, and data sources into the JCAG AIS to provide refinement of JCAG products.
- Continues Technology/Operations Beta site activities to provide the capability to assess, integrate, and test the applicability of commercial and government technologies that support the JCAG mission, and provide to the analysts the ability to evaluate potential analytical tools and evolve analytical processes.

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N / BA-5			PE 0605015N			Joint Counterintelligence Assessment Group #53035						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Electronic Document Access											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Contract has not been awarded, to date.												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support	GSA	Harris Corporation				5.497		2.337			7.834	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		5.497		2.337		0.000	7.834	
Remarks:												

R-1 SHOPPING LIST - Item No. 147 - 3 of 147 - 3

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 3 of 3)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0605500N MULTI-MISSION MARITIME AIRCRAFT					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost				53.329	74.531	218.861	198.566	437.913	405.369	1,012.931	2,401.500
H2696 MULTI-MISSION MARITIME AIRCRAFT				53.329	74.531	218.861	198.566	437.913	405.369	1,012.931	2,401.500
Quantity of RDT&E Articles								1	1		2
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Multi-mission Maritime Aircraft (MMA) program provides the replacement system(s) for the aging P-3/EP-3 aircraft. The MMA program is intended to meet the Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance Mission Need Statement (MNS) which was validated by the Joint Requirements Oversight Council on 29 FEB 00. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 MAR 2000. New start notification was provided to Congress and concept exploration activities began in June, 2000 under Program Element 0702207N / Project Unit W2737.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under System Demonstration because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 148

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT				PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT					
COST (\$ in Millions)	Prior Year Cost		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				53.329	74.531	218.861	198.566	437.913	405.369	1,012.931	2,401.500
RDT&E Articles Qty								1	1		

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Multi-mission Maritime Aircraft (MMA) program provides the replacement system(s) for the aging P-3/EP-3 aircraft. The MMA program is intended to meet the Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance Mission Need Statement (MNS) which was validated by the Joint Requirements Oversight Council on 29 FEB 00. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 MAR 2000. New start notification was provided to Congress and concept exploration activities began in June, 2000 under Program Element 0702207N / Project Unit W2737.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2002 PLANS:

- (U) (\$.500) MMA Analysis of Alternatives.
- (U) (\$35.411) Component Advanced Development phase contracts to evaluate MMA system alternative concepts. Scope of effort includes:
 - Design MMA alternative concepts' weapon system architectures
 - Conduct technical, logistic, cost, and risk analysis of each proposed MMA alternative concept
 - Apply Modeling & Simulation tools to validate proposed risk mitigations for each MMA alternative concept
 - Evaluate system requirements through cost/performance trade-off analysis
 - Conduct technical and cost analysis of a unmanned air vehicle (UAV) in the maritime role
 - Evaluate a UAV in the maritime role
- (U) (\$ 3.500) Provide engineering and technical support for the Component Advanced Development phase.
- (U) (\$10.304) Provide engineering and technical support for the MS B acquisition documentation, the AoA and the industry Component Advanced Development (CAD) Phase studies.
- (U) (\$ 2.000) Provide management support for the MS B acquisition documentation, the AoA and the industry CAD Phase studies.
- (U) (\$ 1.614) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002																																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT	PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT																																																		
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>2. FY 2003 PLANS:</p> <p>(U) (\$50.000) Complete CAD phase contracts. Scope of effort includes:</p> <ul style="list-style-type: none"> - Begin development of MMA detailed design, Systems Integration Lab(s) and test articles - Conduct technical, logistics, cost, and risk analysis of each proposed MMA alternative concept - Evaluate system requirements through cost/performance trade-off analysis - Apply Modeling & Simulation tools to validate proposed risk mitigations for each MMA alternative concept - Refine UAV systems requirements for maritime role and validate concept of operations - Conduct technical and cost analysis of an unmanned air vehicle (UAV) in the maritime role <p>(U) (\$ 2.200) Provide engineering and technical analysis support for CAD.</p> <p>(U) (\$20.331) Provide engineering and technical support for the CAD.</p> <p>(U) (\$ 2.000) Provide management support for the MS B acquisition documentation and CAD.</p>																																																				
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> <th style="text-align: center;"><u>FY2003</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2002 President's Budget:</td> <td></td> <td style="text-align: center;">53.804</td> <td></td> </tr> <tr> <td>(U) Adjustments from the FY2002 President's Budget:</td> <td></td> <td style="text-align: center;">-0.475</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget Submit:</td> <td></td> <td style="text-align: center;">53.329</td> <td style="text-align: center;">74.531</td> </tr> </tbody> </table>				<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	(U) FY 2002 President's Budget:		53.804		(U) Adjustments from the FY2002 President's Budget:		-0.475		(U) FY 2003 President's Budget Submit:		53.329	74.531																																		
	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>																																																	
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(U) Adjustments from the FY2002 President's Budget:		-0.475																																																		
(U) FY 2003 President's Budget Submit:		53.329	74.531																																																	
<p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2002 decrease of \$0.475 million consists of a decrease for an undistributed congressional reduction.</p> <p>(U) Schedule: Not applicable.</p> <p>(U) Technical: Not applicable.</p>																																																				
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>APN BLI 019300 Inventory Sustainment</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">19.672</td> <td style="text-align: center;">138.496</td> <td style="text-align: center;">20,457.132</td> <td style="text-align: center;">20,615.300</td> </tr> <tr> <td>APN BLI 060510 Initial Spares - MMA</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">9.536</td> <td style="text-align: center;">94.458</td> <td style="text-align: center;">103.994</td> </tr> <tr> <td>RDTEN PE 0702207N Depot Maintenance (Proj W2737)</td> <td style="text-align: center;">3.898</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RDTEN PE 0305204N BAMS UAV (Proj A3061)</td> <td></td> <td></td> <td style="text-align: center;">152.000</td> <td style="text-align: center;">130.697</td> <td style="text-align: center;">133.355</td> <td style="text-align: center;">79.292</td> <td style="text-align: center;">39.583</td> <td style="text-align: center;">continuing</td> <td style="text-align: center;">continuing</td> </tr> </tbody> </table>			<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	APN BLI 019300 Inventory Sustainment						19.672	138.496	20,457.132	20,615.300	APN BLI 060510 Initial Spares - MMA							9.536	94.458	103.994	RDTEN PE 0702207N Depot Maintenance (Proj W2737)	3.898									RDTEN PE 0305204N BAMS UAV (Proj A3061)			152.000	130.697	133.355	79.292	39.583	continuing	continuing
<u>Line Item No. & Name</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																											
APN BLI 019300 Inventory Sustainment						19.672	138.496	20,457.132	20,615.300																																											
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RDTEN PE 0305204N BAMS UAV (Proj A3061)			152.000	130.697	133.355	79.292	39.583	continuing	continuing																																											

R-1 SHOPPING LIST - Item No. 148

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 3 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT	PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT	
<p>(U) D. ACQUISITION STRATEGY: The Multi-Mission Maritime Aircraft (MMA) Milestone 0 was approved 22 March 2000 and the resulting Acquisition Decision Memorandum directed MMA to begin the CE phase consisting of an AoA and industry concept studies. These activities began 3Q/01 and were funded under Program Element 0702207N / Project Unit W2737. In FY2002 a Decision Review will be conducted to gain approval to enter the Component Advanced Development (CAD). The CAD will be a competitive award to multiple contractors to define alternative MMA concept system architectures and evaluate associated risks and proposed mitigations. Selection of MMA concept and approval to enter System Development and Demonstration (SDD) phase will occur at a MS B decision review in FY2004. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance".</p>			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U) Program Milestones		Component Advanced Development Decision Review 2Q/02	Component Advanced Development 1Q-4Q Milestone B DAB 1Q/04
(U) Engineering Milestones			Preliminary Design Review 3Q/04
(U) T&E Milestones			Developmental Testing on (EDM) commences 2Q/08
(U) Contract Milestones		Component Advanced Development Contract(s) Award 3Q/02	System Development and Demonstration Phase Contract Award 1Q/04

R-1 SHOPPING LIST - Item No. 148

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 4 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605500N MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT						
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
AOA	SS/FFP	CNA/ VA				0.500	01/02				0.500	0.500
Analysis	C/FFP	Johns Hopkins Univ-APL				3.500	01/02	2.200	01/03		5.700	5.700
MMA CAD	TBD	TBD				35.411	05/02	50.000	01/03		85.411	85.411
MMA SDD	TBD	TBD								1,260.696	1,260.696	1,260.696
Subtotal Product Development						39.411		52.200		1,260.696	1,352.307	1,352.307
Remarks:												
Technical Support	C/FFP	RBC Inc., VA				0.600	01/02	1.600	01/03	24.225	26.425	26.425
Government Engineering Support	WX	NAWCAD, Pax River, MD				9.704	01/02	18.731	01/03	403.427	431.862	431.862
Subtotal Support						10.304		20.331		427.652	458.287	458.287
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605500N MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT						
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	TBD	TBD								500.000	500.000	
Subtotal T&E										500.000	500.000	
Remarks:												
Govt Program Management Support	WX	NAWCAD, Pax River, MD				2.000	01/02	2.000	01/03	85.292	89.292	
Small Business Innovative Research Assessment (SBIR)						1.614					1.614	
Subtotal Management						3.614		2.000		85.292	90.906	
Remarks:												
Total Cost						53.329		74.531		2,273.640	2,401.500	
Remarks:												

R-1 SHOPPING LIST - Item No. 148

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 6 of 6)

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002																																																				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																																																					
RDT&E, N BA 5		NSIPS Dev/Mod 0508713N			COMNAVRESFOR 62908																																																					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																																																
Project Cost		5.653	12.966	12.798	4.760	4.488	4.214	4.242	0.000	49.121																																																
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A																																																	
<p>These funds were moved from O&M,NR to RDT&E,N due to Congressional (HAC) direction and subsequent OUSD (C) guidance to adjust IT budgeting.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Navy Standard Integrated Personnel System (NSIPS) is an Automated information System (AIS) designed to collect the personnel and pay data for all navy members. NSIPS will be Defense Information Infrastructure Common Operating Environment (DII COE) and year 2000 compliant. It will incorporate the functionality of many Navy Systems into an integrated Navy personnel and pay system for active duty, reserve, and retired personnel. NSIPS will interface with Defense Joint Military Pay System (DJMS) for pay functionality.</p> <p>NSIPS/Electronic Field Service Record (NSIPS/EFSR) In order to comply with the NSIPS MS III ORD, the NSIPS program must develop and deploy an electronic field service record, that will automate the current paper service record maintenance process and allow commands electronic access to service record data on assigned personnel. This electronic field service record system and concept will be called NSIPS/EFSR.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>. FY 2001 ACCOMPLISHMENT:</p> <ol style="list-style-type: none"> (U) (\$5.653) NSIPS developed improvements to existing software releases. Releases are designed to improve the overall effectiveness of NSIPS and provide cost savings in other program areas. FY 2002 PLAN: (\$2.258) NSIPS will be developing and testing final release and improvements to existing software releases. Releases are designed to improve the overall effectiveness of NSIPS and provide cost savings in other program areas. NSIPS/EFSR (\$10,708) will be interface development/engineering and scanning of current records into the system. FY 2003 PLAN: (\$8,778) NSIPS will be developing additional capabilities and web enablement. NSIPS/EFSR (\$4,020) will complete development, scanning and implementation. <p>(U) B. PROGRAM CHANGE SUMMARY</p> <p>(U) Funding: FY2001: Section 8086 .7% Pro-rata Reduction (-41K); Government-Wide Rescission (-13K); SBIR Assesment (-152K); and Navy Miscellaneous Adjustment (-\$58K). FY2002: Section 8123: Management Reform Initiative (-\$116K).</p> <p>(U) Other Program Funding:</p> <table border="1"> <thead> <tr> <th></th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> </tr> </thead> <tbody> <tr> <td>OPN</td> <td>1.869</td> <td>14.106</td> <td>12.281</td> <td>0.370</td> <td>0.306</td> <td>5.254</td> <td>5.371</td> </tr> <tr> <td>OMN</td> <td>9.684</td> <td>11.574</td> <td>21.684</td> <td>16.005</td> <td>13.554</td> <td>8.807</td> <td>9.097</td> </tr> </tbody> </table> <p>(U) Program Schedule</p> <table border="1"> <thead> <tr> <th></th> <th>FY 1997</th> <th>FY 1998</th> <th>FY 1999</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> </tr> </thead> <tbody> <tr> <td></td> <td>MS I</td> <td>MS II</td> <td></td> <td></td> <td>MS IIIA</td> <td>MS III</td> <td></td> </tr> <tr> <td></td> <td>May 1997</td> <td>January 1998</td> <td></td> <td></td> <td>Sept 2001</td> <td>July 2002</td> <td></td> </tr> </tbody> </table>												FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	OPN	1.869	14.106	12.281	0.370	0.306	5.254	5.371	OMN	9.684	11.574	21.684	16.005	13.554	8.807	9.097		FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003		MS I	MS II			MS IIIA	MS III			May 1997	January 1998			Sept 2001	July 2002	
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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N BA 5			NSIPS 0508713N		NSIPS Dev/Mod 62908							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	CPFF	Contractor, ITC New Orleans				4.963	19 Oct 01	1.495	10/02	CONT	CONT	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		4.963		1.495		CONT	CONT	
Remarks:												
Development Support Equipment											0.000	
Software Development	CPFF	Lockheed-Martin, New Orleans		5.653	12/00	6.037	10/02	11.053	10/02	CONT	CONT	
Training Development								0.250	10/02		0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	5.653		6.037		11.303		CONT	CONT	CONT
Remarks:												

R-1 SHOPPING LIST - Item No. 149

Exhibit R-3, Project Cost Analysis

(Exhibit R-3, page 2 of 3)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N			NSIPS Dev/Mod		NSIPS Dev/Mod 62908							
Cost Categories (Tailor to WBS, or System/Item Requirements)	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											0.000	
Operational Test & Evaluation						1.966	TBD				0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		1.966		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	5.653		12.966		12.798		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 149

Exhibit R-3, Project Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 3 of 3)

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