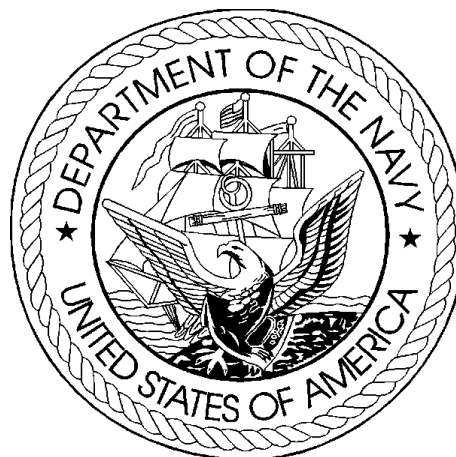


DEPARTMENT OF THE NAVY  
FISCAL YEAR (FY) 2004/2005  
BIENNIAL BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES  
FEBRUARY 2003

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

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Department of the Navy

FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	Thousands of Dollars					S E C
			BA	FY 2002	FY 2003	FY 2004	FY 2005	
88	0604212N	Other Helo Development	05	79.983	35.383	66.764	193.627	U
89	0604214N	AV-8B Aircraft - Eng Dev	05	34.251	18.154	10.527	12.365	U
90	0604215N	Standards Development	05	71.083	39.443	50.063	55.431	U
91	0604216N	Multi-Mission Helicopter Upgrade Development	05	141.446	92.831	76.998	79.152	U
92	0604217N	S-3 Weapon System Improvement	05	0.401	0.413	0.000	0.000	U
93	0604218N	Air/Ocean Equipment Engineering	05	6.386	7.555	4.309	4.779	U
94	0604221N	P-3 Modernization Program	05	6.014	2.297	7.306	6.785	U
95	0604230N	Warfare Support System	05	0.000	0.000	1.466	1.958	U
96	0604231N	Tactical Command System	05	64.068	68.768	68.805	60.460	U
97	0604234N	E-2C Radar Modernization	05	75.661	111.186	352.298	537.837	U
98	0604245N	H-1 Upgrades	05	167.706	236.039	90.589	61.174	U
99	0604261N	Acoustic Search Sensors	05	16.140	13.621	15.831	20.290	U
100	0604262N	V-22A	05	415.819	410.780	441.142	306.982	U
101	0604264N	Air Crew Systems Development	05	15.915	7.524	8.765	8.032	U
102	0604270N	EW Development	05	119.237	79.543	256.701	390.964	U
103	0604273N	VHXX Executive Helo Development	05	0.000	0.000	197.431	199.577	U
104	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	0.000	19.913	87.943	84.140	U
105	0604300N	SC-21 Total Ship System Engineering	05	235.952	688.170	1,037.987	1,438.998	U
106	0604307N	Surface Combatant Combat System Engineering	05	320.187	340.426	205.733	208.048	U
107	0604311N	LPD-17 Class Systems Integration	05	0.947	9.909	7.989	8.659	U
108	0604312N	Tri-Service Standoff Attack Missile	05	1.871	14.613	25.137	27.162	U
109	0604329N	Small Diameter Bomb (SDB)	05	0.000	1.945	0.000	0.000	U

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## Department of the Navy

## FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	Thousands of Dollars					S E C
			BA	FY 2002	FY 2003	FY 2004	FY 2005	
110	0604366N	Standard Missile Improvements	05	13.574	20.819	76.927	100.683	U
111	0604373N	Airborne MCM	05	58.363	73.728	88.514	49.954	U
112	0604503N	SSN-688 and Trident Modernization	05	66.764	123.765	80.815	66.797	U
113	0604504N	Air Control	05	13.213	4.841	10.472	7.357	U
114	0604507N	Enhanced Modular Signal Processor	05	0.972	0.502	1.006	1.085	U
115	0604512N	Shipboard Aviation Systems	05	16.684	26.031	18.352	25.255	U
116	0604518N	Combat Information Center Conversion	05	5.070	0.000	21.244	16.489	U
117	0604558N	New Design SSN	05	192.053	240.731	112.355	118.303	U
118	0604561N	SSN-21 Developments	05	5.448	16.353	13.482	3.057	U
119	0604562N	Submarine Tactical Warfare System	05	37.209	25.089	32.238	35.670	U
120	0604567N	Ship Contract Design/ Live Fire T&E	05	122.405	181.098	138.017	140.018	U
121	0604574N	Navy Tactical Computer Resources	05	38.596	15.803	2.267	2.456	U
122	0604601N	Mine Development	05	0.000	1.458	1.497	6.247	U
123	0604603N	Unguided Conventional Air-Launched Weapons	05	16.773	13.697	9.701	0.000	U
124	0604610N	Lightweight Torpedo Development	05	9.900	14.638	3.442	10.072	U
125	0604618N	Joint Direct Attack Munition	05	49.037	47.780	33.029	66.015	U
126	0604654N	Joint Service Explosive Ordnance Development	05	7.810	7.609	8.136	8.113	U
127	0604703N	Personnel, Training, Simulation, and Human Fa	05	1.257	1.303	1.941	2.183	U
128	0604710N	Navy Energy Program	05	3.030	6.789	0.000	0.000	U
129	0604721N	Battle Group Passive Horizon Extension System	05	9.310	17.077	16.942	18.078	U
130	0604727N	Joint Standoff Weapon Systems	05	30.282	16.283	0.775	0.526	U
131	0604755N	Ship Self Defense (Detect & Control)	05	62.141	60.598	40.930	25.633	U

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PAGE N- 8

UNCLASSIFIED

Department of the Navy

FY 2004/2005 R D T E Program

Exhibit R-1

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

DATE: February 2003

LINE NO	PROGRAM ELEMENT NUMBER	ITEM NOMENCLATURE	BA	Thousands of Dollars				S E C	
				FY 2002	FY 2003	FY 2004	FY 2005		
132	0604756N	Ship Self Defense (Engage: Hard Kill)	05	33.075	29.367	23.076	31.032	U	
133	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	41.350	43.970	35.508	28.566	U	
134	0604771N	Medical Development	05	22.585	72.024	9.121	9.351	U	
135	0604777N	Navigation/ID System	05	22.317	45.579	45.726	28.788	U	
136	0604784N	Distributed Surveillance System	05	42.514	37.591	28.755	64.107	U	
137	0604800N	Joint Strike Fighter (JSF) - EMD	05	724.911	1,708.900	2,171.736	2,226.004	U	
138	0604910N	Smart Card	05	0.844	0.695	0.552	0.697	U	
139	0605013M	Marine Corps IT Dev/Mod	05	10.219	7.894	8.835	11.722	U	
140	0605013N	Information Technology Development	05	63.489	73.314	30.562	25.135	U	
141	0605014N	Def Integ Mil Human Resources Sys (DIMHRS) - RDT&E	05	44.410	50.115	78.724	49.552	U	
142	0605015N	Joint Counter-Intel Assessment Group (JCAG) - RDT&E	05	5.918	0.000	0.000	0.000	U	
143									
144	0605500N	Multi-mission Maritime Aircraft (MMA)	05	41.741	68.123	76.243	343.800	U	
145	0508713N	Navy Standard Integrated Personnel System (NSIPS)	05	11.360	12.507	4.653	4.393	U	
TOTAL	Engineering and Manufacturing Development				3,606.058	5,264.584	6,239.357	7,233.558	

**Fiscal Year 2004/2005 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, [\$13,946,085,000] \$14,106,653,000, to remain available for obligation until September 30, [2004] 2005: *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: *Provided further*, That funds appropriated in this paragraph shall be available for the Cobra Judy program. (10 U.S.C. 174, 2352-54, 7522; Department of Defense Appropriations Act, 2003.)

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604212N ASW & OTHER HELO DEVELOPMENT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>79.983</b>	<b>35.383</b>	<b>66.764</b>	<b>193.627</b>	<b>334.743</b>	<b>343.626</b>	<b>154.498</b>	<b>85.810</b>
H1109 CH/MH-53	<b>0.625</b>	<b>2.846</b>	<b>2.799</b>	<b>2.423</b>	<b>2.464</b>	<b>2.506</b>	<b>2.554</b>	<b>2.601</b>
H2415 MH-60S DEVELOPMENT	<b>39.411*</b>	<b>23.884**</b>	<b>59.113</b>	<b>81.711</b>	<b>34.703</b>	<b>8.481</b>	<b>5.910</b>	<b>6.022</b>
H2463 LAMPS MKIII DATA LINK	<b>23.558</b>							
H3059 CH-53E SLEP	<b>1.999</b>	<b>2.917</b>	<b>4.852</b>	<b>109.493</b>	<b>297.576</b>	<b>332.639</b>	<b>146.034</b>	<b>77.187</b>
H3060 Integrated Mechanical Diagnostics System (IMD)	<b>6.739</b>							
H9055 SH-60 Laser Aim Scoring System (LASS)	<b>0.963</b>	<b>0.977</b>						
H9056 High Tech Training in Support of DoD Legacy	<b>0.963</b>	<b>1.368</b>						
H3058 VHXX Replacement	<b>0.698***</b>	<b>3.391***</b>						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

\* The FY 2002 budget reflects a \$5.1M Congressional add for CSTRS which has been reduced by \$0.048 million for Congressional Rescissions and \$0.105 million for a SBIR assessment and will be executed under H2773.

\*\*The FY 2003 budget reflects a \$1.173M Congressional add for Advance Cable Design.

\*\*\*Starting in FY 04, project will be funded in PE 0604273N VHXX Executive Helo Development

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

H1109 - The H-53E helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. From FY-2002 to FY-2009, H-53E efforts will continue to develop and qualify components, prior to production approval decisions, in order to replace obsolete system components. Emphasis will be placed on incorporating supportability improvement modifications in conjunction with the H-53E Service Life Extension/Modernization program. These efforts combined, will significantly improve the readiness of the H-53E fleet while reducing long term operational and supportability costs. RDT&E efforts will also focus on trade studies and risk reduction measures for the CH-53E Service Life Extension/Modernization Program, including but not limited to, studies and risk reduction efforts to identify candidate survivability, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life to 2025. 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.



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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604212N ASW & Other Helo Development	
<p>H3059 - The CH-53E is the Marine Corps only heavy lift helicopter for transport of troops, heavy weapons and equipment and support of combat assault operations, tactical retrieval and recovery operations. The CH-53E is unable to support the current Marine Corps Aviation Implementation Plan that calls for assault support and heavy lift through the year 2025 and the capability to lift large, mission representative, external and internal loads to complement the range and speed of the MV-22. The modernized CH-53E, which will be developed through this program, will have the capability required to execute our national military strategy through the year 2025. FY03-FY05 RDT&amp;E efforts will focus on trade studies for the CH-53E Service Life Extension/Modernization Program including identification of candidate improvements, risk reduction measures, survivability engineering studies, engine selection, Developmental and Operational Test requirements definition, Business Case Analyses (BCAs) to refine and support the acquisition plan, cost model refinement and development of acquisition documentation.</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 target to support Navy H-60 armed helicopter training and readiness events requiring laser scoring capability.</p>		

R-1 SHOPPING LIST - Item No. 88

**UNCLASSIFIED**

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 3 of 47)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604212N ASW & Other Helo Development	
U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (Cont'd)		
<p>H9056-The non-availability of replacement parts is quickly becoming the number one reason for severely reduced readiness of our weapon systems. Many of the sub-tier OEM suppliers no longer exist or are unable to respond to our requests for quotes. Sometimes organic depots locally manufacture parts, one at a time, using manual processes and tooling. Congressional funding for FY02 establishes a NAVAIR program that will feature an advanced center for laser data acquisition and reverse engineering that leverages an existing solid model creation capability. This combined capability creates manufacturing ready technical data that can be offered to multiple approved sources for rapid manufacturing of obsolete components, at significantly reduced costs. This funding develops an organic NAVAIR-owned and managed capability (equipment and personnel) to reverse engineer weapon system parts into manufacturing-ready digital technical data packages (D-TDP), suitable for low-cost, high-precision manufacturing.</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 (Congressional Add).</p>		

R-1 SHOPPING LIST - Item No. 88

**UNCLASSIFIED**

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 4 of 47)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H1109 CH/MH-53			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.625</b>	<b>2.846</b>	<b>2.799</b>	<b>2.423</b>	<b>2.464</b>	<b>2.506</b>	<b>2.554</b>	<b>2.601</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The H-53E helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. From FY-2002 to FY-2009, H-53E efforts will continue to develop and qualify components, prior to production approval decisions, in order to replace obsolete system components. Emphasis will be placed on incorporating supportability improvement modifications in conjunction with the H-53E Service Life Extension/Modernization program. These efforts combined, will significantly improve the readiness of the H-53E fleet within the Navy and Marine Corps while reducing long term operational and supportability costs. RDT&E efforts will also focus on trade studies and risk reduction measures for the CH-53E Service Life Extension/Modernization Program, including but not limited to, studies and risk reduction efforts to identify candidate survivability, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life to 2025. 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.

R-1 SHOPPING LIST - Item No. 88

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 5 of 47)

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.719	0.754	0.000
RDT&E Articles Quantity				

Conduct cockpit architecture design to adress communication deficiencies, bread board testing, information display shortfalls, navigation upgrades/modifications and obsolescence issues.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.162	0.000	0.000	0.000
RDT&E Articles Quantity				

Conducted Armor Threat Assessment and Armor Selection Test on aircraft.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.463	0.250	0.000	0.000
RDT&E Articles Quantity				

Conduct Aircraft Cockpit Survivability and System Assessment. Model and test survivability design effectiveness.

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.577	0.710	0.477
RDT&E Articles Quantity				

Design, model ,and test effectiveness of ballistic vulnerability (armor) package.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.896	1.712
RDT&E Articles Quantity				

Evaluate, test and analyze recommended improvements to the legacy T-64 engine and related systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.150	0.000	0.000
RDT&E Articles Quantity				

Integrate software applique for cockpit and avionics improvements, to include the development of new sensors and the impact on flight control computers.

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.289	0.234
RDT&E Articles Quantity				

Conduct Business Case Analyses to determine impact of high Operation and support (O&S) cost drivers and address alternatives for obsolescence issues.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.150	0.000	0.000
RDT&E Articles Quantity				

Select and test antenna and other electronic components.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.150	0.000
RDT&E Articles Quantity				

Update CH-53E baseline vulnerability assessment (last full assessment was in 1979)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		2.300	2.910	2.870	2.485
Current BES/President's Budget		0.625	2.846	2.799	2.423
Total Adjustments		-1.675	-0.064	-0.071	-0.062
Summary of Adjustments					
Congressional program reductions			-0.017		
Congressional undistributed reductions					
Congressional rescissions		-0.005			
SBIR/STTR Transfer		-0.027			
Economic Assumptions		-0.007	-0.047	-0.068	-0.060
Reprogrammings		-1.636			
Other Navy/OSD adjustments				-0.003	-0.002
Congressional increases					
Subtotal		-1.675	-0.064	-0.071	-0.062
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H1109 CH/MH-53					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY:</b>										
This is a non-ACAT program with no specific acquisition strategies.										

R-1 SHOPPING LIST - Item No. 88

**UNCLASSIFIED**

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H1109 CH/MH-53						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Raytheon	0.702	0.395	Various						1.097	1.097
Ancillary Hardware Development	Various	Various	0.883	0.208	Various	0.233	Various			Continuing	Continuing	
Aircraft Integration	Various	NAWCAD Pax River, MD				0.311	Various			Continuing	Continuing	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	NAWCAD Pax River, MD						0.572	Various	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			1.585	0.603		0.544		0.572		Continuing	Continuing	
Remarks:												
Development Support	Various	NAWCAD Pax River, MD		0.406	Various					Continuing	Continuing	
Software Development	Various	Various		0.327	Various					Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data	Various	Various				0.194	Various			Continuing	Continuing	
Studies & Analyses	Various	Various	0.869	0.550	Various	1.335	Various	0.259	Various	Continuing	Continuing	
GFE	Various	NAWCAD Pax River, MD		0.125	Various					Continuing	Continuing	
Award Fees											0.000	
Subtotal Support			0.869	1.408		1.529		0.259		Continuing	Continuing	
Remarks:												



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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H1109 CH/MH-53						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.054	0.550	Various	0.219	Various	0.577	Various	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation	Various	NAWCWD China Lake, CA						0.477	Various	Continuing	Continuing	
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			1.054	0.550		0.219		1.054		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support	Various	NAWCAD Pax River, MD		0.180	Various					Continuing	Continuing	
Program Management Support	Various	Various				0.380	Various	0.400	Various	Continuing	Continuing	
Travel	WX	NAWCAD Pax River, MD	0.512	0.105	11/02	0.127	11/03	0.138	11/04	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			0.512	0.285		0.507		0.538		Continuing	Continuing	
Remarks:												
Total Cost			4.020	2.846		2.799		2.423		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>											
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-5</b>												0604212N ASW & OTHER HELO DEVELOPMENT												H1109 CH/MH-53												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Program Milestones</b>																																				
<b>Engineering Milestones</b>																																				
External Cargo Handling System Design																																				
Aircraft Survivability Assmt	[REDACTED]																																			
Armor Threat Assessment & Selection Test	[REDACTED]																																			
Cockpit & A/C System Assessment	[REDACTED]																																			
Other A/C Cockpit Integration Candidates																																				
Design Armor Package					[REDACTED]																															
Cockpit Upgrade Architecture Selection					[REDACTED]																															
Baseline Vulnerability Study					[REDACTED]																															
Hydraulic & Electric Actuator Assessment									[REDACTED]																											
Fuel Sponson Ballistic Vulnerability Assessment													[REDACTED]																							
Obsolescence Issues/Studies																	[REDACTED]																			
Survivability Analysis																	[REDACTED]																			
Legacy P31 Efforts																	[REDACTED]																			
<b>T&amp;E Milestones</b>					Armor Selection Test	Survivability Design Test	Cockpit Design Test		Tech Data Study				Complete Initial Phase - Live-Fire Vulnerability Test																							
						Cockpit/Avionics SW Int.	Contract Award																													
						Antennae/AMP/Modem Test																														

R-1 SHOPPING LIST - Item No. 88

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development			PROJECT NUMBER AND NAME H2415 MH-60S Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>39.411*</b>	<b>23.884**</b>	<b>59.113</b>	<b>81.711</b>	<b>34.703</b>	<b>8.481</b>	<b>5.910</b>	<b>6.022</b>
RDT&E Articles Qty								

**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) , Organic Airborne Mine Countermeasures (OAMCM) and Armed Helo. 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. The Armed Helo will provide Combat Search and Rescue, Anti Surface Warfare (SUW) and Force Protection to include Link 16. The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support.

\* The FY 2002 budget reflects a \$5.1M Congressional add for CSTRS which has been reduced by \$0.048 million for Congressional Rescissions and \$0.105 million for a SBIR assessment and will be executed under H2773.

\*\*The FY 2003 budget reflects a \$1.173M Congressional add for Advance Cable Design.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development	PROJECT NUMBER AND NAME H2415 MH-60S Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	13.095	10.765	27.596	36.287
RDT&E Articles Quantity				

The design, development, integration and support of the AMCM unique items into the MH-60S airframe. Designed, developed, integrated and supported the interoperability of Automatic Flight Control System (AFCS) (Completed in FY02). T&E on AMCM Mission Kits as each weapon system is introduced to the MH-60S. AMCM Training systems engineering and development; including training situation analysis, and instructional system development (ISD) documentation. Live Fire Test and Evaluation for the MH-60S program. Navy field activity systems engineering, program management support and travel. Design, develop, integrate and support the Link 16 development (FY04 - cont.). Integrate Link16 training situation analysis, instructional system development (ISD) document (FY05 - cont.). RTOC initiatives: Improved organizational level oil analysis technology, replacement of flight control self containing bolts (FY04), and weight reduction (FY04-FY05).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	21.369	11.946	31.517	45.424
RDT&E Articles Quantity				

Developmental efforts on the avionics architecture and systems of the MH-60S helicopter. Development of the consoles, as well as software modifications, to support AMCM sensors and palletized system. Navy field activity systems engineering and test support, program management, and travel. Continue AMCM Training systems engineering and development; including training situation analysis, and instructional system development (ISD) documentation. AMCM sensor systems test and evaluation support (FY03 - continuing). Engineering and integration effort to incorporate AMCM requirements into the aircraft and ship C4I structure (FY04 - cont.). Design, develop, integrate and support the Link 16 development (FY04- cont.). Integrate Link16 training situation analysis, instructional system development (ISD) document (FY05 - cont.).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.947			
RDT&E Articles Quantity				

(Congressional Plus-up) Development of Carriage, Stream, Tow, & Recovery System (CSTRS) prototypes. Engineering analysis and trade studies to define unique requirements for all five AMCM sensors. Navy field activity systems engineering and test support, program management, and travel.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Developme	PROJECT NUMBER AND NAME H9213 Adv Cable Design

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.173	0.000	0.000
RDT&E Articles Quantity				

Design, develop, integrate and support the Advanced Cable Design for the MH-60S.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development	PROJECT NUMBER AND NAME H2415 MH-60S Development			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		41.721	23.241	20.158	13.056
Current BES/President's Budget		39.411	23.884	59.113	81.711
Total Adjustments		-2.310	0.643	38.955	68.655
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.144		
Congressional rescissions		-0.089			
SBIR/STTR Transfer		-1.213			
Economic Assumptions		-0.110	-0.413	-1.493	-1.819
Reprogrammings		-0.898			
Congressional increases			1.200		
Other Navy/OSD Adjustments				40.448	70.474
Subtotal		-2.310	0.643	38.955	68.655
Schedule:					
AMCM SDR , PDR and CDR (formerly shown as Common Console/AFCS CDR) was added to reflect total system review vice component. AMCM CDR slipped to 1Q FY04 due to a delay in PDR. Common Console delivery slipped due to delay in spending authorization and subsequent contract award. FY 2004 through FY 2009 schedule reflects an updated Acquisition Program Baseline (APB) approved during the Navy Program Decision Meeting and the addition of Link 16, Block 3B. The revision to the APB better defines the Evolutionary Acquisition Strategy as it pertains to the MH-60S block upgrades. FY 2003 AMCM Weapon System Integration Contract Award identified separately to distinguish Block 2B. FY 2004 T&E Milestone previously reported as AMCM OT-IIIa reclassified as AMCM OT-IIC.					
Technical:					
Not applicable.					

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development			PROJECT NUMBER AND NAME H2415 MH-60S Development				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
017900 APN-1 MH-60S AMCM (Included in numbers above)	251.484 10.202	352.738 27.155	431.508 61.321	401.767 56.180	592.817 36.420	695.151 61.458	685.026 66.819	895.054 92.322	349.242 32.330	
060510 APN-6 MH-60S	21.781	13.627	13.938	20.366	29.722	4.069	4.684	3.276		
0604216N, H3053, MH-60S AMCM	11.978	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
<b>E. ACQUISITION STRATEGY:</b>										
<p>Airborne Mine Countermeasures (AMCM) and Armed Helo are elements of the existing MH-60S ACAT IC Program. MH-60S will employ an evolutionary acquisition approach via the MH-60S Block Upgrade. This allows for future modification for systems still in early development. The block upgrades will maximize commonality across all MH-60S missions and all AMCM/Armed Helo weapon systems, including logistics, training and maintenance. The MH-60S block upgrade are as follows.</p> <ul style="list-style-type: none"> <li>- Block 1 - Combat Support Helicopter</li> <li>- Block 2- Airborne Mine Countermeasures</li> <li>-Block 3 - Armed Helo</li> </ul>										

R-1 SHOPPING LIST - Item No. 88

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**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 19 of 47)



# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & Other Helo Development				H2415 MH-60S Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development, Airfr	SS/CPAF	Sikorsky, Stratford, CT	35.653			18.439	various	24.386	various	8.172	86.650	86.650
Primary Hardware Development, Avionics	SS/CPAF	Lockheed Martin, Owego, NY	37.768	10.660	02/03	22.357	various	33.521	various	23.766	128.072	128.072
Primary Hardware Development, CS	SS/CPFF	CTC, Johnstown, PA	22.992								22.992	22.992
Training Development	Various	NAWCAD &NAWC-TSD	0.806			0.733	02/04	1.700	various	1.800	5.039	
Systems Engineering	CPFF	Cortland Cable, NY		1.173	03/03						1.173	
GFE	TBD	TBD				1.300	01/04				1.300	
Award fees	SS/CPAF	Sikorsky & Lockheed Martin	1.815			1.900	various	3.600	various	1.600	8.915	8.915
Subtotal Product Development			99.034	11.833		44.729		63.207		35.338	254.141	
Remarks:												
Development Support												
Software Development, Airframe												
Software Development, Avionics												
Integrated Logistics Support	Various	Various	3.313	1.061	12/02	3.071	12/03	4.712	12/04	Continuing	Continuing	
Configuration Managemnet												
Technical Data										0.100	0.100	
Studies & Analysis	Various	NAWCAD	2.674								2.674	
GFE												
Subtotal Support			5.987	1.061		3.071		4.712		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & Other Helo Development			H2415 MH-60S Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NRWATS, NAWCAD & NSW	7.871	3.770	various	3.311	11/03	4.856	various	4.144	23.952	
Operational Test & Evaluation	WX	NAWCAD & NRWATS	0.814	0.303	various					1.000	2.117	
Live Fire Test & Evaluation	WX	NAWCAD & China Lake	0.786	0.581	various	0.946	01/04	0.855	various		3.168	
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			9.471	4.654		4.257		5.711		5.144	29.237	
Remarks:												
Contractor Engineering Support	Various	Various	3.935	0.688	01/03	0.525	various	0.300	various	Continuing	Continuing	
Government Engineering Support	Various	Various	12.103	3.872	01/03	4.890	various	5.492	various	Continuing	Continuing	
Program Management Support	Various	Various	7.027	1.477	01/03	1.541	various	2.089	various	Continuing	Continuing	
Travel	WX	NAWCAD	0.389	0.299	11/02	0.100	various	0.200	various	0.400	1.388	
Transportation												
SBIR Assessment												
Subtotal Management			23.454	6.336		7.056		8.081		Continuing	Continuing	
Remarks:												
Total Cost			137.946	23.884		59.113		81.711		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																			
<b>AMCM</b>		0604212N ASW and Other Helo Development												H2415 MH-60S Development																			
RDT&E, N / BA-5		2002				2003				2004				2005				2006				2007				2008				2009			
Fiscal Year		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>		IPR II ▲ WSIT AWARD				WSIT AWARD Block 2B △				WSIT AWARD Block 2B △				PR III Block 2A △				IOC Block 2A ★				IPR IV Block 2B △				FOC Block 2B ★							
MH-60S AMCM Aircraft Development		SDR ▲		PDR ▲		CDR △		FCA △		PCA △																							
AMCM Mission Kits CSTRS & Common Console						FIT △		Ground Testing △																									
<b>Test &amp; Evaluation Milestones</b>				CT1 □		CT2 □		DT-IIC □		OT-IIC □																							
MH-60S AMCM Block 2A																																	
MH-60S AMCM Block 2B																																	
<b>Production Milestones</b>				Contract Award △																													
AMCM Mission Kits																																	
Initial Production																																	
FRP																																	
<b>Deliveries</b>						2 △		3 △		3 △		1 △		6 △		6 △		6 △		6 △		6 △		6 △		6 △		6 △		6 △			
CSTRS																																	
AFCS				Test Article △																													
Common Console										3 △		3 △		3 △		6 △		6 △		6 △		6 △		6 △		6 △		6 △		6 △			

R-1 SHOPPING LIST - Item No. 88

**Notes:** T&E Milestones: Block 2A and 2B contain overarching test periods that include the applicable sensor systems within their respective Blocks. Each Block involves concurrent testing of the AMCM systems within the Block that includes the requisite time periods between test events.

## UNCLASSIFIED

**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 22 of 47)

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604212N ASW and Other Helo Development				PROJECT NUMBER AND NAME H2415 MH-60S Development			
Schedule Profile - AMCM	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>Block 2A</b>								
WSIT Contract Award Block 2A- UCA	1Q							
In-Process Review	1Q							
System Development	1Q-4Q							
System Design Review (SDR)	2Q							
Preliminary Design Review (PDR)	4Q							
Contract Award Initial Production	4Q							
Start Initial Production	4Q							
Critical Design Review (CDR)		1Q						
AFCS Test Article Delivery		2Q						
Functional Integration Test		3Q						
Ground Testing		4Q						
Contractor Test		1Q/4Q	1Q					
Initial Production Delivery		4Q	2Q-4Q					
Functional Configuration Audit			1Q					
Physical Configuration Audit			3Q					
Developmental Testing (DT-IIC)			1Q-3Q					
Operational Testing (OT-IIC)			3Q-4Q	1Q				
Contract Award - Production				2Q				
Full Rate Production (FRP) Decision 2A				2Q				
Initial Operational Capability - Block 2A					1Q			
Full Rate Production Delivery					1Q	1Q		
<b>Block 2B</b>								
WSIT Contract Award Block 2B		2Q		1Q				
System Development		1Q-4Q	1Q-4Q					
Contractor Test			1Q-4Q	1Q-2Q				
Developmental Testing (DT-IID)				1Q-4Q	1Q			
Initial Production Delivery				1Q-2Q				
Operational Testing (OT-IID)				4Q	1Q-4Q			
Fleet Operational Capability - Block 2B								4Q
Full Rate Production (FRP) Decision 2B						2Q		
Full Rate Production Delivery							1Q	1Q

R-1 SHOPPING LIST - Item No.

88

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 23 of 47)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>											
Link 16																																				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-5</b>								0604212N ASW and Other Helo Development								H2415 MH-60S Development																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>				▲ MS III (MH-60S)																																
<b>(Block 3B)</b>																																				
MH-60S Block 3B Development																																				
Design and Build																																				
MH-60S Block 3B Development Milestones																																				
Aircraft Block 3B Mod Delivery																																				
Software																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Contractor Test																																				
Development Test																																				
Operational Test																																				
Reports																																				

R-1 SHOPPING LIST - Item No. 88

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

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604212N ASW and Other Helo Development				H2415 MH-60S Development			
Schedule Profile - Link 16	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
IPR 1			1Q					
System Design and Integration			1Q-4Q					
Systems Requirements Review (SRR)			2Q					
System Design Review (SDR)			3Q					
Software Specification Review (SSR)			3Q					
Preliminary Design Review (PDR)			3Q					
Software Readiness Review (SRR)			4Q					
Critical Design Review (CDR)			4Q					
Quality Design and Build			4Q	1Q-2Q				
Software Delivery x.0				3Q				
Aircraft Block 3B Mod Delivery				3Q				
Contractor Test (CT)				3Q-4Q				
IPR 2					1Q			
Software Delivery x.1					1Q			
Test Readiness Review (TRR)					1Q			
Software Delivery x.2					2Q			
Developmental Testing (DT-IIE)					1Q-2Q			
Operational Test Readiness Review					4Q			
Operational Testing (OT-IIE)					4Q	1Q		
IPR 3						3Q		
Functional Configuration Audit (FCA)						4Q		
IOC						4Q		
Physical Configuration Audit							3Q	

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 25 of 47)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H3059 CH-53E SLEP			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>1.999</b>	<b>2.917</b>	<b>4.852</b>	<b>109.493</b>	<b>297.576</b>	<b>332.639</b>	<b>146.034</b>	<b>77.187</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The CH-53E is the Marine Corps only heavy lift helicopter for transport of troops, heavy weapons and equipment and support of combat assault operations, tactical retrieval and recovery operations. The CH-53E is unable to support the current Marine Corps Aviation Implementation Plan that calls for assault support and heavy lift through the year 2025 and the capability to lift large, mission representative, external and internal loads to complement the range and speed of the MV-22. The modernized CH-53E, that will be developed through this program, will have the capability required to execute our national military strategy through the year 2025. FY03-FY05 RDT&E efforts will focus on trade studies for the CH-53E Service Life Extension/Modernization Program including identification of candidate improvements, risk reduction measures, survivability engineering studies, engine selection, Developmental and Operational Test requirements definition, Business Case Analyses (BCAs) to refine and support the acquisition plan, cost model refinement and development of acquisition documentation.

R-1 SHOPPING LIST - Item No. 88

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 26 of 47)

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3059 CH-53E SLEP

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.200	0.275	0.290
RDT&E Articles Quantity				

Navy field activity systems engineering support of the requirements generation process, including identification of candidate survivability enhancements and improvements for CH-53E modernization.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.883	2.107	12.575
RDT&E Articles Quantity				

NAVAIR Integrated Product Team and Navy field activity systems engineering and logistics efforts to prepare the Acquisition Strategy, examine equipment and avionics for the modernized CH-53E, develop acquisition milestone documentation and prepare Request for Proposal (RFP) documentation for the System Development and Demonstration (SDD) contract.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.999	1.834	2.290	0.000
RDT&E Articles Quantity				

Perform trade studies to develop a System Requirements Analysis, refine the baseline configuration and perform risk reduction efforts including modeling and simulation.

R-1 SHOPPING LIST - Item No. 88

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3059 CH-53E SLEP

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.180	0.180
RDT&E Articles Quantity				

Perform Business Case Analyses (BCAs) to refine and support the program definition and acquisition strategy.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.175
RDT&E Articles Quantity				

COMOPTEVFOR (HMX) test support to identify Operational Test (OT) requirements and ensure the aircraft satisfies the mission need.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	96.273
RDT&E Articles Quantity				

CH-53E System Development and Demonstration (SDD) contract for engineering and manufacturing development that will translate the design approach developed through the trade studies into a stable, producible and cost effective system design.

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604212N ASW & OTHER HELO DEVELOPMENT	H3059 CH-53E SLEP			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	2.983	4.975	112.190
Current BES/President's Budget		1.999	2.917	4.852	109.493
Total Adjustments		1.999	-0.066	-0.123	-2.697
Summary of Adjustments					
Congressional program reductions			-0.017		
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.049	-0.118	-2.380
Reprogrammings		1.999			
Other Navy/OSD Adjustments				-0.005	-0.317
Congressional increases					
Subtotal		1.999	-0.066	-0.123	-2.697
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H3059 CH-53E SLEP					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 Procurement Line: BLI 015800/CH-53E SLEP							192.4	267.2	TBD	TBD
<b>E. ACQUISITION STRATEGY:</b>										
Not applicable. The Operational Requirements Document (ORD) and an Analysis of Alternatives (AOA) are under development; will be used by Marine Corps leadership to develop an Acquisition Strategy beginning in FY03/04.										

R-1 SHOPPING LIST - Item No. 88

**UNCLASSIFIED**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H3059 CH-53E SLEP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	Contractor TBD						96.273	12/04	731.399	827.672	827.672
Ancillary Hardware Development												
Training Development												
Aircraft Integration												
Ship Suitability												
Systems Engineering	TBD	Contractor TBD		0.508	03/03	1.659	12/03				2.167	2.167
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.508		1.659		96.273		731.399	829.839	
Remarks: Primary Hardware Development contract not yet negotiated. Target Value of Contract will be available after contract award												
Development Support												
Software Development										1.650	1.650	
Integrated Logistics Support	Various	NAWCAD Pax River, MD				0.665	11/03	1.123	11/04	11.364	13.152	
Configuration Management										0.900	0.900	
Technical Data												
Studies & Analyses	CPFF	Booz Allen Hamilton, MD	1.999	0.835	03/03	0.738	12/03	0.337	12/04		3.909	3.909
GFE												
Award Fees												
Subtotal Support			1.999	0.835		1.403		1.460		13.914	19.611	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 31 of 47)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H3059 CH-53E SLEP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	NAWCAD Pax River, MD						0.175	11/04	23.246	23.421	
Operational Test & Evaluation	Various	OPTEVFOR (HMX)						0.175	11/04	12.764	12.939	
Live Fire Test & Evaluation	Various	NAWCWD China Lake, CA								1.453	1.453	
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.350		37.463	37.813	
Remarks:												
Contractor Engineering Support	Various	NAWCAD Pax River, MD		0.196	01/03	0.340	11/03	1.865	11/04	14.516	16.917	
Government Engineering Support	Various	NAWCAD Pax River, MD		1.013	03/03	0.820	11/03	4.802	11/04	37.376	44.011	
Program Management Support	Various	NAWCAD Pax River, MD		0.315	03/03	0.490	11/03	4.118	11/04	32.239	37.162	
Travel	Various	NAWCAD Pax River, MD		0.050	03/03	0.140	11/03	0.625	11/04	5.589	6.404	
Transportation												
SBIR Assessment												
Subtotal Management			0.000	1.574		1.790		11.410		89.720	104.494	
Remarks:												
Total Cost			1.999	2.917		4.852		109.493		872.496	991.757	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

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**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 32 of 47)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT								PROJECT NUMBER AND NAME H3059 CH-53E SLEP																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
<b>Engineering Milestones</b>																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test (FY09-FY10)																																				
Operational Test (FY10-FY11)																																				
<b>Production Milestones</b>																																				
LRIP FY08																																				
FRP (MS C) - FY10																																				
Deliveries (FY12 - 20)																																				

R-1 SHOPPING LIST - Item No. 88

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

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development			PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.963</b>	<b>0.977</b>						
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(U) A. 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 target to support Navy H-60 armed helicopter training and readiness events requiring laser scoring capability.

R-1 SHOPPING LIST - Item No. 88

**Exhibit R-2a, RDTE Project Justification**  
(Exhibit R-2a, page 35 of 47)

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.963	0.977		
RDT&E Articles Quantity				

Continue the design and development efforts required for adaptation of an existing LASS base station, target and flight data unit to Navy H-60 configuration requirements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 88

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# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.991	0.000		
Current BES/President's Budget		0.963	0.977		
Total Adjustments		-0.028	0.977	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.006		
Congressional rescissions		-0.002			
SBIR/STTR Transfer		-0.025			
Economic Assumptions		-0.003	-0.017		
Reprogrammings		0.002			
Congressional increases			1.000		
Subtotal		-0.028	0.977	0.000	0.000
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 88

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**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H9055 SH-60 Laser Aim Scoring System (LASS)
--	--	--

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN BLI-053000 H-60 Series	5.496	21.220	18.405	12.550	13.382	14.751	8.712	9.221		103.737

**E. ACQUISITION STRATEGY:**

FY03 RDT&E funding provided for Laser Aim Scoring System will be placed on an existing contract to complete a two year effort. The program will develop an aircrew training system which provides real-time feedback to H-60 flight crews on the effectiveness in designating targets with Laser energy through a forward looking infrared. The system will track effectiveness and tactical proficiency. If system proves effective, units may be purchased through fleet training funds.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H9056 High Tech Training in Support of DoD Legacy Parts				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>0.963</b>	<b>1.368</b>						<b>0.000</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The non-availability of replacement parts is quickly becoming the number one reason for severely reduced readiness of our weapon systems. Many of the sub-tier OEM suppliers no longer exist or are unable to respond to our requests for quotes. Sometimes organic depots locally manufacture parts, one at a time, using manual processes and tooling. Congressional funding for FY02 establishes a NAVAIR program that will feature an advanced center for laser data acquisition and reverse engineering that leverages an existing solid model creation capability. This combined capability creates manufacturing ready technical data that can be offered to multiple approved sources for rapid manufacturing of obsolete components, at significantly reduced costs. The efforts will include appropriate market analysis/trade studies required to assess market supportability of the associated technology. This funding develops an organic NAVAIR-owned and managed capability (equipment and personnel) to reverse engineer weapon system parts into manufacturing-ready digital technical data packages (D-TDP), suitable for low-cost, high-precision manufacturing.

R-1 SHOPPING LIST - Item No. 88

**Exhibit R-2a, RDTE Project Justification**  
(Exhibit R-2a, page 39 of 47)

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H9056 High Tech Training in Support of DoD Legacy Parts

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.500	0.000	0.000	0.000
RDT&E Articles Quantity				

Hardware and software acquisition to support Laser scanning Process.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.225	0.000	0.000	0.000
RDT&E Articles Quantity				

Training development, documentation and delivery of complete training package.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.191	0.000	0.000	0.000
RDT&E Articles Quantity				

Identified weapons system parts for implementation.

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H9056 High Tech Training in Support of DoD Legacy Parts

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.047	0.000	0.000	0.000
RDT&E Articles Quantity				

Upgraded Facility to accommodate new hardware requirements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.890	0.000	0.000
RDT&E Articles Quantity				

In house support (both reimbursable and non reimbursable) of ongoing identification of appropriate weapons system parts for implementation

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.478	0.000	0.000
RDT&E Articles Quantity				

Study/investigation of market analysis and supportability for digital data package development.

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604212N ASW & OTHER HELO DEVELOPMENT	H9056 High Tech Training in Support of DoD Legacy Parts			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.991	0.000	0.000	0.000
Current BES/President's Budget		0.963	1.368	0.000	0.000
Total Adjustments		-0.028	1.368	0.000	0.000
Summary of Adjustments					
Congressional program reductions			-0.009		
Congressional undistributed reductions					
Congressional rescissions		-0.002			
SBIR/STTR Transfer		-0.025			
Economic Assumptions		-0.003	-0.023		
Reprogrammings		0.002			
Other Navy/OSD adjustments					
Congressional increases			1.400		
Subtotal		-0.028	1.368	0.000	0.000
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H9056 High Tech Training in Support of DoD Legacy Parts				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY:</b>										
This is a non-ACAT program with no specific acquisition strategies.										

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H9056 High Tech Training in Support of DoD Legacy Parts						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WX	NAWCAD, Pax River, MD	0.250								0.250	
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.250	0.000		0.000		0.000		0.000	0.250	
Remarks:												
Development Support												
Software Development	WX	NAWCAD, Pax River, MD	0.250								0.250	
Integrated Logistics Support	WX	NAWCAD, Pax River, MD	0.225								0.225	
Configuration Management												
Technical Data												
Studies & Analyses				0.478	Various						0.478	
GFE												
Award Fees												
Subtotal Support			0.475	0.478		0.000		0.000		0.000	0.953	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604212N ASW & OTHER HELO DEVELOPMENT			H9056 High Tech Training in Support of DoD Legacy Parts						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	Various	NAWCAD Pax River, MD		0.363	Various						0.363	
Government Engineering Support	WX	NAWCAD Pax River, MD	0.191								0.191	
Program Management Support	Various	NAWCAD Pax River, MD	0.047	0.527	Various						0.574	
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.238	0.890		0.000		0.000		0.000	1.128	
Remarks:												
Total Cost			0.963	1.368		0.000		0.000		0.000	2.331	
Remarks:												

R-1 SHOPPING LIST - Item No. 88

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 45 of 47)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT								PROJECT NUMBER AND NAME H9056 High Tech Training in Support of DoD Legacy Parts																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Program Milestones</b>																																
Perform hardware/software installation, integration & acceptance																																
Laser acquisition training program development																																
Definition & modification of existing facility																																
Trade Studies																																
<b>Test &amp; Evaluation Milestones</b>																																
<b>Production Milestones</b>																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 88

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

# UNCLASSIFIED



EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5		0604214N / AV-8B Aircraft						
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	34.251	18.154	10.527	12.365	15.231	11.317	10.470	10.897
H0652 AV-8B	23.380	16.063	10.527	12.365	15.231	11.317	10.470	10.897
H2634 AV-8B (OSCAR)	10.871	2.091						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (H0652) The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Self Contained Approach (SCA), Zero Retention Force (ZRF), Escape System, Joint Mission Planning System (JMPS), Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft Handling . The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. PMA-257 will accomplish this mission by conducting Engineering Project Description (EPD) investigations and performing a series of planned Accelerated Simulated Mission Tests (ASMET) to derive engineering improvements to the engine. The SCA will provide pilot situational awareness to aid in conducting vertical landings at sea. The ZRF 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 Escape System will qualify an improved ejection seat to reduce the risk of injury to aircrew. The JMPS is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The 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. Beginning FY02 ZRF and SCA were combined into one software build, Harrier 2.0 (H20) as a follow on to Open System Core Avionics Requirement.

(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). 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 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 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. LRIP approval 2nd quarter of FY2002. Completed developmental testing of OC1.2 fourth quarter FY2002. OTRR approval fourth quarter FY2002.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H0652 / AV-8B			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>23.380</b>	<b>16.063</b>	<b>10.527</b>	<b>12.365</b>	<b>15.231</b>	<b>11.317</b>	<b>10.470</b>	<b>10.897</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(H0652) The program provides AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Self Contained Approach (SCA), Zero Retention Force (ZRF), Escape System, Joint Mission Planning System (JMPS), Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft Handling . The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine. PMA-257 will accomplish this mission by conducting Engineering Project Description (EPD) investigations and performing a series of planned Accelerated Simulated Mission Tests (ASMET) to derive engineering improvements to the engine. The SCA will provide pilot situational awareness to aid in conducting vertical landings at sea. The ZRF 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 Escape System will qualify an improved ejection seat to reduce the risk of injury to aircrew. The JMPS is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The 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. Beginning FY02 ZRF and SCA were combined into one software build, Harrier 2.0 (H20) as a follow on to Open System Core Avionics Requirement.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Aircraft Handling	2.919	3.809	0.782	0.662
RDT&E Articles Quantity				

Aircraft handling and performance investigations to improve safety and increase operational performance. Conduct study of AV-8B Obsolescence issues and will continue aircraft handling and performance investigations to improve safety and increase operational performance. Conduct testing and analysis of AV-8B obsolescence issues and will continue aircraft handling and performance investigations to improve safety and increase operational performance.

	FY 02	FY 03	FY 04	FY 05
Engine Life Management Plan (ELMP)	5.494	8.384	2.294	6.003
RDT&E Articles Quantity				

Testing, analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine. Formalize engine design development efforts to be incorporated into the engine. Complete ASMET III testing of the AV-8B engine and will formalize Engine design development efforts based off of ASMET III and incorporate into the engine.

	FY 02	FY 03	FY 04	FY 05
Joint Mission Planning System (JMPS)	2.085	2.590	0.000	0.000
RDT&E Articles Quantity				

Software design, development, and integration of the AV-8B JMPS.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Harrier 2.0 (H20)	12.882	1.280	0.000	0.000
RDT&E Articles Quantity				

Conducted design and development, integration of the H20 flight software program, PDR, CDR and begin Development Test (DT) and Operational Testing (OT).

	FY 02	FY 03	FY 04	FY 05
Tactical Aircraft Moving Map Capability (TAMMAC)	0.000	0.000	7.451	5.700
RDT&E Articles Quantity				

Program initiation and integration of Tactical Aircraft Moving Map Capability (TAMMAC) and PDR /CDR. Development Test (DT) and Operational Testing (OT) of Tactical Aircraft Moving Map Capability (TAMMAC)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604214N / AV-8B AIRCRAFT	H0652 / AV-8B			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		24.754	16.426	13.253	6.997
Current BES/President's Budget		23.380	16.063	10.527	12.365
Total Adjustments		-1.374	-0.363	-2.726	5.368
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.097		
Congressional rescissions		-0.057			
SBIR/STTR Transfer		-0.402			
Economic Assumptions		-0.065	-0.266	-0.309	-0.301
Reprogrammings		-0.850			
Other Adjustments				-2.417	5.669
Congressional increases					
Subtotal		-1.374	-0.363	-2.726	5.368
Schedule:					
The FY2002 AVJMPS Critical Design Review (CDR) schedule changed from 1Q/02 to 1Q/03 due to PMA-233 schedule slip in delivering the JMPS build 5. The FY2004 TAMMAC Procurement Initiation Review (PIR) schedule changed from 1Q/04 to 2Q/04 to reflect program re-phasing.					
Technical:					
N/A					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN BLI 051400, AV-8B Series Modifications	73.934	58.848	20.866	18.806	28.655	16.553	16.242	16.500	46.700	297.104

**E. 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 UPCO and HARCO. Funding for the Engine Life Management Program (ELMP) will be placed on a cost type contract to Rolls Royce to address safety of flight issues, top readiness degraders, engine removal and mission failure drivers in order to improve Fleet readiness and cost of ownership. It is also developed to assess life management program issues and design fixes for any service revealed deficiencies. NAWCWD, China Lake began integration of the AVJMPS program in FY01. Both SCA and ZRF were combined into one Software build, Harrier 2.0 (H20) in FY02 as a follow on to the OSCAR Operational Flight Program (OFP).

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604214N / AIRCRAFT			H0652 / AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	9.606								9.606	9.609
Primary Hdw Dev. - Ejection Seat	C/CPFF	Various	2.639								2.639	2.639
Primary Hdw Dev. - ELMP	C/CPFF	Rolls Royce	4.993	6.384	03/03	2.294	10/03	4.626	10/04	29.293	47.590	47.590
Primary Hdw Dev. - H20	C/CPFF	Ratheon / Boeing	5.603								5.603	5.603
Primary Hdw Dev. - Other	Various	Various	1,360.849								1,360.849	1,360.849
Systems Engineering	WX	NAWC-WD China Lake	27.084	1.852	02/03	6.235	10/03	4.755	10/04	8.682	48.608	
Systems Engineering	WX	NAWC-AD Pax	2.673	3.338	02/03	1.400	10/03	2.436	10/04	30.453	40.300	
Systems Engineering	WX	NAWC-AD NADEP	11.104								11.104	
Award Fees	C/CPAF	Various	0.838	0.043	10/02						0.881	
Subtotal Product Development			1,425.389	11.617		9.929		11.817		68.428	1,527.180	
Remarks:												
Software Development - JMPS	WX	NAWC-WD China Lake	2.085	2.590	02/03						4.675	
Development Support												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			2.085	2.590		0.000		0.000		0.000	4.675	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-5</b>			0604214N / AV-8B AIRCRAFT			H0652 / AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-WD China Lake	33.950	1.050	01/03						35.000	
Operational Test & Evaluation		NAWC-WD China Lake	19.458								19.458	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			53.408	1.050		0.000		0.000		0.000	54.458	
Remarks:												
Contractor Engineering Support	C/FFP	NAWC-AD PAX	47.262	0.658	02/03	0.457	10/03	0.434	10/04	2.459	51.270	
Travel	WX	NAWC-AD PAX	0.146	0.148	11/02	0.141	10/03	0.114	10/04	0.442	0.991	
SBIR Assessment			0.402								0.402	
											0.000	
											0.000	
Subtotal Management			47.810	0.806		0.598		0.548		2.901	52.663	
Remarks:												
Total Cost			1,528.692	16.063		10.527		12.365		71.329	1,638.976	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT								PROJECT NUMBER AND NAME H0652 / AV-8B																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>									AVJMPS OTRR	AVJMPS IOC			TAMMAC OTRR																			
System Development			H2.0 PDR	H2.0 CDR									TAMMAC PIR	TAMMAC PDR/CDR																		
Engine Life Management Program		ELMP				ELMP				ELMP								ELMP														
Software AVJMPS Delivery																																
H20 Delivery																																
TAMMAC S/W Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																

R-1 SHOPPING LIST - Item No. 89

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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT				PROJECT NUMBER AND NAME H0652 / AV-8B			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
ELMP Contract Award	2Q							
H20 PDR	4Q							
H20 CDR		1Q						
ELMP Contract Award		1Q						
AVJMPS Critical Design Review CDR		1Q						
AVJMPS DT		3Q						
H20 DT		3Q-4Q						
ELMP Contract Award			1Q					
AVJMPS OTRR			1Q					
AVJMPS Delivery			2Q-3Q					
H20 OTRR			2Q					
AVJMPS OT			1Q-2Q					
AVJMPS Introduction to Fleet			2Q-3Q					
TAMMAC PIR			2Q					
TAMMAC PDR / CDR			3Q-4Q					
H20 OT			1Q-3Q					
H20 Delivery			4Q					
ELMP Contract Award				1Q				
TAMMAC DT				1Q				
TAMMAC OTRR				2Q				
TAMMAC OT				2Q-3Q				
TAMMAC S/W Delivery				4Q				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H2634 / OSCAR			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>10.871</b>	<b>2.091</b>						
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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 SINGARS, 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/SINGARS. 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 JDAM and HAVEQUICK/SINGARS 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 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. LRIP approval 2nd quarter of FY2002. Completed developmental testing of OC1.2 fourth quarter FY2002. OTRR approval fourth quarter FY2002. OPEVAL commenced fourth quarter FY2002 and will continue through fourth quarter FY2003.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H2634 / OSCAR

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
OSCAR	10.871	2.091		
RDT&E Articles Quantity				

The Open Systems Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Store 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.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604214N / AV-8B AIRCRAFT	H2634 / OSCAR			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		5.969	2.139	0.000	0.000
Current BES/President's Budget		10.871	2.091	0.000	0.000
Total Adjustments		4.902	-0.048	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.013		
Congressional rescissions		-0.013			
SBIR/STTR Transfer		-0.047			
Economic Assumptions		-0.030	-0.035		
Reprogrammings		4.992			
Other Adjustments					
Congressional increases					
Subtotal		4.902	-0.048	0.000	0.000
Schedule:					
OTTR moved to FY02 4th QTR to address software technical issues discovered during DTIIB. OT completion moved to FY03 4th QTR to allow incorporation of software fixes.					
Technical:					
N/A					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H2634 / OSCAR
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN BLI 051400, AV-8B Series Modifications	73.934	58.848	20.866	18.806	28.655	16.553	16.242	16.5	46.7	297.104

**E. 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.

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604214N / AV-8B AIRCRAFT			H2634 / OSCAR						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Boeing St Louis	62.373								62.373	62.373
Primary Hardware Development	CPFF	DCMC, Draper Laboratory	0.285								0.285	0.285
Primary Hardware Development	FFP	DSC.KMX Norfolk	0.406								0.406	0.406
Systems Engineering	WX	NAWC-WD China Lake	38.879								38.879	
Systems Engineering	WX	NAWC-AD Pax River	3.015	0.391	10/02						3.406	
Systems Engineering	Various	PMA-209	3.518								3.518	
Award Fees	C/CPAF	Boeing St Louis	8.967								8.967	8.967
Subtotal Product Development			117.443	0.391		0.000		0.000		0.000	117.834	
Remarks:												
Development Support Equipment	Various	Various	0.284								0.284	
Integrated Logistics Support	Various	Various	0.323								0.323	
Configuration Management	Various	Various	0.143								0.143	
Subtotal Support			0.750	0.000		0.000		0.000		0.000	0.750	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-5</b>			0604214N / AV-8B AIRCRAFT			H2634 / OSCAR						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-WD China Lake	14.789								14.789	
Operational Test & Evaluation	WX	NAWC-WD China Lake	3.001								3.001	
Operational Test & Evaluation	WX	COMOPTEVFOR, Norfolk	1.000	1.700	02/03						2.700	
Subtotal T&E			18.790	1.700		0.000		0.000		0.000	20.490	
Remarks:												
Contractor Engineering Support	C/FFP	NAWC-AD Patuxent River	0.402								0.402	0.402
Travel	WX	NAWC-AD Patuxent River	0.019								0.019	
SBIR Assessment			0.047								0.047	
Subtotal Management			0.468	0.000		0.000		0.000		0.000	0.468	
Remarks:												
Total Cost			137.451	2.091		0.000		0.000		0.000	139.542	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT								PROJECT NUMBER AND NAME H2634 / OSCAR												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>								LRIP2 or MS △																								
Software OC1.2 Integration																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test	DT-IIA		DT-IIB																													
Operational Test									OT-II OPEVAL ▬																							
								▲																								
<b>Production Milestones</b>																																
LRIP		▲																														
FRP START												▲																				
DELIVERIES													2	3	2	2	2	2	3	3	3	3	6	6	6	6	5	5	5	5	4	4

R-1 SHOPPING LIST - Item No. 89

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

# UNCLASSIFIED

## CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT				PROJECT NUMBER AND NAME H2634 / OSCAR				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
HW LRIP Decision	2Q								
OC1.2 Integration	1Q-3Q								
OC1.2 DT IIA	1Q-2Q								
OC1.2 DT IIB	3Q								
OC1.2 OTRR	4Q								
Begin OT OC1.2	4Q								
OC1.2 OT		1Q-4Q							
OC1.2 - LRIP2 or MSIII		3Q							
Full Rate Production Start		4Q							

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604215N, Standards Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>71.083</b>	<b>39.443</b>	<b>50.063</b>	<b>55.431</b>	<b>69.863</b>	<b>43.797</b>	<b>31.601</b>	<b>27.592</b>
E2310/Flight Polynomials	<b>0.355</b>							
E2311/Stores Planning and Weaponering Module	<b>7.328</b>	<b>1.742</b>	<b>5.016</b>	<b>6.297</b>	<b>4.930</b>	<b>6.141</b>	<b>6.688</b>	<b>6.994</b>
E2312/Common Helicopters	<b>2.654</b>	<b>1.175</b>	<b>0.960</b>	<b>0.891</b>	<b>0.916</b>	<b>1.105</b>	<b>1.125</b>	<b>1.145</b>
S1857/Calibration Standards	<b>4.754</b>	<b>4.203</b>	<b>1.266</b>	<b>1.388</b>	<b>1.405</b>	<b>1.697</b>	<b>1.721</b>	<b>1.750</b>
W0572/Joint Services/Navy Standard Avionics Components and Subsystems	<b>55.992</b>	<b>32.323</b>	<b>42.821</b>	<b>46.855</b>	<b>62.612</b>	<b>34.854</b>	<b>22.067</b>	<b>17.703</b>

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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).

Project E2311, Stores Planning and Weaponering Module: The Naval Stores Planning and Weaponering (NSPW), now referred to as the Naval Aviation Weaponering Component (NAWC) project is an incrementally developed software product that will provide a certified unit level weaponering 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 rehoused in a Windows 2000 environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and target area planning functions to comprise NAWC. 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.

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604215N, Standards Development	
<p>Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting 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 &amp; elevation), and enhanced fidelity of landing zone, target zone, and 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/S, 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&amp;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&amp;E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, AMC&amp;D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Switches, Joint Tactical Radio Systems (JTRS) EMD units, Aircraft Wireless Internal Communication Systems (AWICS) EMD units, Vector Product Format (VPF) software units and Terrain Awareness Warning Systems (TAWS) units. New Start for FY04 is JTRS.</p>		

R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>7.328</b>	<b>1.742</b>	<b>5.016</b>	<b>6.297</b>	<b>4.930</b>	<b>6.141</b>	<b>6.688</b>	<b>6.994</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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 authorization, 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 2000 environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and target area planning functions to comprise NAWC. 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.

R-1 SHOPPING LIST - Item No. 90

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 3 of 48)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.206	0.311	3.816	0.000
RDT&E Articles Quantity				

Continued NAWC Construct Phase. Begin Functional Qualification Test and certification testing on F/A-18A/B/C/D product. Plan for NAWC transition to Fleet Users. Release NAWC Version 1 for F/A-18A/B/C/D as stand alone product.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.161	0.569	0.000	4.997
RDT&E Articles Quantity				

Initiate development of the JMPS integrated version of NAWC and F/A-18E/F functionality. Continue JMPS/NAWC integration. Integrate NAWC F/A-18A/B/C/D/E/F functionality into JMPS.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.511	0.862	0.710	0.746
RDT&E Articles Quantity				

Provide essential updates to ATACS until NAWC is released. Provide essential updates to NAWC. Develop and certify common components for TACMAN (CUWCE, GTWTS, ATACS) & JMEM (PC effects and Common Computer). Continue to develop and certify common components for TACMAN.

R-1 SHOPPING LIST - Item No. 90

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.365	0.400
RDT&E Articles Quantity				

Support domain engineering (Separation, Loads, Fuzing, Safe Escape).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.125	0.154
RDT&E Articles Quantity				

Support external IT standards (DII COE, IT21, DITSCAP)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.450	0.000	0.000	0.000
RDT&E Articles Quantity				

Initiated analysis and design of loading capability of JMPS Version aircraft (CH-46, CH-53D, CH-53E, HH-60H, KC-130, T-45, UH-1, SH-60R, and AH-1)

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponering Module			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		7.498	1.781	1.680	0.572
Current BES/President's Budget		7.328	1.742	5.016	6.297
Total Adjustments		-0.170	-0.039	3.336	5.725
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.010		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions		-0.020	-0.029	-0.170	-0.180
Reprogrammings		-0.150			
Other Adjustment				3.506	5.905
Congressional increases					
Subtotal		-0.170	-0.039	3.336	5.725
Schedule:					
ATACS scheduel eas ajusted from 3Q/02 to 1Q/03 due to the late completion of changes made to the TACMAN.					
Technical: Not Applicable					

R-1 SHOPPING LIST - Item No. 90

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning System	13.159	6.458	8.639	9.797	8.113	11.934	12.152	12.370	Continuing	Continuing
PE2806F Air Force Mission Support System Related RDT&E:	17.300	16.540	62.348	144.059	144.544	247.154	98.609	96.164	Continuing	Continuing
P.E. 0604231N (Mission Planning)										
<b>E. ACQUISITION STRATEGY:</b>										
<p>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 &amp; V and Certification Testing are also combined teams of United States Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.</p>										

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N Standard Development			E2311 Navy Stores Planning and Weaponering Module						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development	WR	NAWCAD, PAX RIVER, MD	11.541	0.235	11/02	0.405	11/03	0.639	11/04	Continuing	Continuing	
Primary Software Development	GSA/FP	Various	11.747	0.355	01/02	1.813	11/03	2.254	11//04	Continuing	Continuing	
Aircraft Integration												0.000
Ship Integration												0.000
Ship Suitability												0.000
Systems Engineering	Various	Various	5.163	0.181	11/03	0.475	11/03	0.626	11/04	Continuing	Continuing	
Training Development												0.000
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			28.451	0.771		2.693		3.519		Continuing	Continuing	
Remarks:												
Development Support												0.000
Software Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
Studies & Analyses												0.000
GFE												0.000
Award Fees												0.000
Subtotal Support			0.000	0.000		0.000		0.000				0.000
Remarks:												

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 48)

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604215N Standard Development				E2311 Navy Stores Planning and Weaponing Module					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	4.639	0.470	11/02	0.687	11/03	0.832	11/04	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			4.639	0.470		0.687		0.832		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NAWCAD, PAX RIVER, MD		0.296	11/02	1.203	11/03	1.448	11/04	Continuing	Continuing	
Program Management Support	Various	Various	2.084	0.075	11/02	0.337	11/03	0.385	11/04	Continuing	Continuing	
Travel	WR	NAWCAD, PAX RIVER, MD	0.990	0.130	11/02	0.096	11/03	0.113	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.074	0.501		1.636		1.946		Continuing	Continuing	
Remarks:												
Total Cost			36.164	1.742		5.016		6.297		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development										PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
ATACS 2.3 Final Release								△																								
NAWC V.1 Release (F/A-18A/B/C/D)								△																								
NAWC V.2 Release (F/A-18A/B/C/D/E/F)/JMPS Integration																				△												
<b>Test &amp; Evaluation Milestones</b>																																
NAWC V.1 Cert Test (F/A-18A/B/C/D)																																
NAWC V.2 FQT & Cert Test (F/A-18A/B/C/D/E/F)																																
<b>Production Milestones</b>																																
NAWC V.1 Dev (F/A-18A/B/C/D)																																
NAWC V.2 Development (F/A-18A/B/C/D/E/F)																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 90

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





**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2312 Common Helicopters			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>2.654</b>	<b>1.175</b>	<b>0.960</b>	<b>0.891</b>	<b>0.916</b>	<b>1.105</b>	<b>1.125</b>	<b>1.145</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting 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 landing zone, and threat analyses. The following type/model/series aircraft are supported by PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R/S, 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.

R-1 SHOPPING LIST - Item No. 90

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2312 Common Helicopters

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.654	1.175	0.960	0.891
RDT&E Articles Quantity				

Continue development of Common Helicopter until functionality and implementation into N-PFPS, N-PFPS Version 3.2, 3.3, and 3.4 are to be released.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 90

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2312 Common Helicopters
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.715	1.202	1.249	1.086
Current BES/President's Budget	2.654	1.175	0.960	0.891
Total Adjustments	-0.061	-0.027	-0.289	-0.195

Summary of Adjustments

Congressional program reductions	-0.006			
Congressional undistributed reductions		-0.007		
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-0.007	-0.020	-0.022	-0.019
Reprogrammings	-0.048			
Other Adjustment			-0.267	-0.176
Congressional increases				
Subtotal	-0.061	-0.027	-0.289	-0.195

Schedule: Not Applicable

Technical: Not Applicable

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2312 Common Helicopters
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning System	13.159	6.458	8.639	9.797	8.113	11.934	12.152	12.370	Continuing	Continuing

**E. ACQUISITION STRATEGY:**

R-1 SHOPPING LIST - Item No. 90

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N Standard Development			E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development	MP	Eglin AFB, Florida	3.083	0.974	11/02	0.727	11/03	0.723	11/04	Continuing	Continuing	
Primary Software Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			3.083	0.974		0.727		0.723		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N Standard Development			E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	WX	NAWCAD, PAX RIVER, MD	2.138	0.171	11/02	0.193	11/03	0.138	11/04	Continuing	Continuing	
Program Management Support	Various	Various	0.918								0.000	
Travel	WX	NAWCAD, PAX RIVER, MD	0.215	0.030	11/02	0.040	11/03	0.030	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.271	0.201		0.233		0.168		Continuing	Continuing	
Remarks:												
Total Cost			6.354	1.175		0.960		0.891		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 90







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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) No. 0604215N; Title: Standards Development			PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>4.754</b>	<b>4.203</b>	<b>1.266</b>	<b>1.388</b>	<b>1.405</b>	<b>1.697</b>	<b>1.721</b>	<b>1.750</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy systems with calibration standards traceable to the National Institute of Standards and Technology.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Developme	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	<b>4.754</b>	4.203	1.266	1.388
RDT&E Articles Quantity				

**FY-2002 Accomplishments:** \$43,000 of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

(U) (\$ 1.903) Completed 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), infrared target designators (3 – 5 um), 3 modeling and simulation projects begun in FY 00 to develop tools for reducing the cost of maintenance and optimizing test decisions, radar cross section measurements, optical systems, fuel measurement systems, multifunction electrical test equipment, electronic internet systems, new technology for reduced crew size, and capacitance measurement systems.

(U) (\$ 1.669) Continued development of 6 calibration standards (hardware) in support of laser power measurements, broadband communication systems, Forward Looking infrared systems, chemical/biological sensors, missile guidance systems, and a modeling and simulation project.

(U) (\$ 1.139) Began development of a suite of standards to reduce cumbersome work practices on board ships.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.754	<b>4.203</b>	1.266	1.388
RDT&E Articles Quantity				

**FY 2003 Plan:**

(U) (\$ 2.955) Complete 21 calibration standards (hardware) in support of reducing shipboard workload, CBD sensors, aircraft EMI/EMC evaluation , broadband communication communication systems, laser power measurements, missile guidance systems, Forward Looking infrared systems, and a modeling and simulation project.

(U) (\$ 1.248 ) Continue development of 5 calibration standards to reduce cumbersome work practices on board ships; and to support MEMS shipboard instatlatins, and Missile guidance systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.754	4.203	<b>1.266</b>	1.388
RDT&E Articles Quantity				

**FY 2004 Plan:**

(U) (\$ 1.071) Complete 5 calibration standards (hardware) in support of reducing shipboard workload, broadband communication systems, missile guidance systems.

(U) (\$ .195) Begin development of calibration standard system to replace aging Navy-Marine Corbs Lab Calibration Systems.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Developme	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.754	4.203	1.266	<b>1.388</b>
RDT&E Articles Quantity				
<p><b>FY 2005 Plan:</b></p> <p style="margin-left: 20px;">(U) (\$ 1.000) Continue development of calibration standards to replace aging Navy-Marine Corps Lab Calibration Systems (MECCA).</p> <p style="margin-left: 20px;">(U) (\$ .388) Begin development of calibration standards in support of broadband communication systems, torque systems for aircraft safety, and reduce cumbersome shipboard work practices.</p>				

R-1 SHOPPING LIST - Item No. 90

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Development	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		4,817.00	1,698.000	1,516.000	1,508.000
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)		4,754.00	4,203.000	1,266.000	1,388.000
Total Adjustments		-63.00	2,505.000	-250.000	-120.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions		-10.000	-8.000	0.000	0.000
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions		-13.000	-24.000	0.000	0.000
Reprogrammings		-32.000	0.000	0.000	0.000
Other Adjustment		-8.000	-63.000	-250.000	-120.000
Congressional increases		0.000	2,600.000	0.000	0.000
Subtotal		-63.000	2,505.000	-250.000	-120.000
Schedule:					
Not applicable					
Technical:					
Not applicable					

R-1 SHOPPING LIST - Item No. 90

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE:		<b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>			Program Element (PE) 0604215N Standards Developmen			Project Unit (PU) No. S1857, Calibration Standards				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY: *</b>										
Not Applicable										

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Program Element (PE) 0604215N Standards Development			Project Unit (PU) No. S1857, Calibration Standards						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC, Corona Division		3.413		0.911		1.028			5.352	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.413		0.911		1.028		0.000	5.352	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 25 of 48)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Program Element (PE) 0604215N Standards Development			Program Element (PE) 0604215N Standards Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support				0.290		0.125		0.122			0.537	
Government Engineering Support				0.430		0.200		0.208			0.838	
Program Management Support											0.000	
Travel				0.070		0.030		0.030			0.130	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.790		0.355		0.360		0.000	1.505	
Remarks:												
Total Cost			0.000	4.203		1.266		1.388		0.000	6.857	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 26 of 48)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development			PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>55.992</b>	<b>32.323</b>	<b>42.821</b>	<b>46.855</b>	<b>62.612</b>	<b>34.854</b>	<b>22.067</b>	<b>17.703</b>
RDT&E Articles Qty	<b>22</b>		<b>21</b>	<b>2</b>	<b>1</b>			

**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), 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), Vector Product Format (VPF), Aircrew Wireless Internal Communication Systems (AWICS), and the Joint Tactical Radio System (JTRS). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft. New Start for FY04 is JTRS.

The RDT&E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Switches, Joint Tactical Radio Systems (JTRS) EMD units, Aircrew Wireless Internal Communication Systems (AWICS) EMD units, Vector Product Format (VPF) software units and Terrain Awareness Warning Systems (TAWS) units.

R-1 SHOPPING LIST - Item No. 90

**Exhibit R-2a, RDTE Project Justification**  
(Exhibit R-2a, page 27 of 48)

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604215N, Standards Development	<b>PROJECT NUMBER AND NAME</b> W0572, Joint Services/Navy Standard Avionics Components and Subsystems
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**(U) B. Accomplishments/Planned Program**

AMC&D	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	44.365	27.425	12.222	6.103
RDT&E Articles Quantity	16			

Conducted PDR and CDR for 8 X10 display. Continued development and obtain production approval for Advanced Multi-Purpose Color Display (AMPCD) for AV-8B and F/A-18C/D. For F/A-18E/F system: completed DT-IIA-2; conducted OT-IIA-1 (OA); continued development of 8X10 display, Fibre Channel Network Switch (FCNS) and AMC; begin and complete DT-IIA-3; conduct TECHEVAL and DT-IIA-4; conduct OPEVAL and Operational Test of Type 2 AMC; and achieve MS III. For AV-8B: completed DT-IIB-1 and DT-IIB-2 (TECHEVAL); continued development of AMC; begin and complete OT-IIB (OPEVAL); and achieve MS III. Complete development of 8X10 display, FCNS and AMC. RDT&E Article Quantity in FY02 are being purchased to allow parallel development and testing to meet demanding schedule requirements.

JSRC	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.116	0.941	1.046	0.795
RDT&E Articles Quantity				

Continue to provide leadership in support of the Navy interest to the JSRC tri-service committee promoting commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.

MCAS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.537	0.000	0.000	0.000
RDT&E Articles Quantity				

Safety: Integrated unit on MCAS lead test platform and conducted MCAS developmental testing. Performed platform studies to determine integration impacts on other platforms.

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems

**(U) B. Accomplishments/Planned Program**

<b>TAWS</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.824	0.472	0.000	0.000
RDT&E Articles Quantity	2			

Safety: Completed DT and commenced OT of the Terrain Awareness Warning System (TAWS) for F/A-18 OFP 17C/18E. Evaluated data and test results from simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance. 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. Two AMU test articles were purchased for lab use at NAWCAD PAX.

<b>TAMPS (TAMMAC)</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.224	0.000	0.000	0.000
RDT&E Articles Quantity				

Completed functional testing efforts for TAMMAC/N-PFPS map planning capabilities. Conducted CDR, software coding and unit testing efforts for TAMMAC/JMPS (UPC).

<b>JMPS</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.549	0.896	1.166	0.000
RDT&E Articles Quantity				

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). 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. Conduct Functional/developmental testing efforts for TAMMAC/JMPS Map planning capability. Conduct SRR and produce software build of the TAMMAC Joint Mission Planning System (JMPS) Unique Planning Component (UPC) to resolve any deficiencies from Operational Test. Incorporate any common requirements from the TAMMAC integration of the MH-60S and AV-8B platforms.

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems
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**(U) B. Accomplishments/Planned Program**

CNS/ATM	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.377	1.322	11.938	16.471
RDT&E Articles Quantity	4			

Continued CNS/ATM integration of Mode S and Required Navigation Performance (RNP)-4 functional integration and certification efforts into naval aircraft. Achieve MS III decision for Mode S. Perform naval aircraft platform functional integration for F/A-18E/F, KC-130J, MH-60S, MH-60R and E-2C in the areas of communications, navigation, surveillance, processing and displays. (Mode S, 8.33khz, FM Immunity, RNP/RNAV). Continue CNS/ATM requirements definition. RDT&E articles in FY02 required for Mode S integration and test.

VPF	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.795	3.432	2.378
RDT&E Articles Quantity			1	

Conduct Vector Product Format (VPF) integration study for TAMMAC. Perform VPF software and hardware integration into TAMMAC. Complete VPF Integration Systems Design Review (SDR). Award VPF development contract. Conduct SRR, PDR and CDR review on VPF. Conduct VPF Developmental Testing (DT). Conduct VPF Systems Qualification Testing (SQT). Conduct VPF Operational Test. One DMC TAMMAC unit will be procured to conduct T&E of the VPF software in TAMMAC.

AWICS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.472	2.137	0.000
RDT&E Articles Quantity			18	

Safety: Produce request for proposal (RFP) for candidate AWICS. Conduct operational assessment (OA) to down-select to one system. Achieve Milestone B for AWICS. Perform initial developmental testing on lead platform (H-53). Achieve Milestone C for AWICS. RDT&E articles are used for environmental, integration, EMI, EMC, TEMPEST and flight testing.

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems

**(U) B. Accomplishments/Planned Program**

<b>JTRS</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	10.880	21.108
RDT&E Articles Quantity			2	2

Award integration contract for the Joint Tactical Radio System (JTRS). Begin aircraft integration analysis and planning for lead platform. Begin development of mission, mission planning, and message processing software for JTRS. RDT&E articles are Engineering Development Units for integration lab install and test aircraft installs. New Start effort for FY04.

JTRS is an Air Force lead program. The Navy is utilizing an Air Force contract vehicle for navy unique requirements and a Navy vehicle for integration efforts on the lead platform.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	53.943	33.076	18.961	9.602
Current BES/President's Budget	55.992	32.323	42.821	46.855
Total Adjustments	2.049	-0.753	23.860	37.253

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.217		
Congressional rescissions	-0.115			
SBIR/STTR Transfer	-1.057			
Economic Assumptions	-0.156	-0.536	-1.025	-1.031
Reprogrammings	3.304			
Other Adjustments	0.073		24.885	38.284
Congressional increases				
Subtotal	2.049	-0.753	23.860	37.253

(U) Schedule:

LPIA Milestone III decision changed from 2Q/02 to 2Q/03 due to required corrections of minor deficiencies identified in operational test.  
 AMC&D OPEVAL from 4Q/03 to 2Q/03 due to a change in the F/A-18E/F test schedule and fleet deployment schedule. AMC&D MS III (AV-8B) changed from 2Q/03 to 3Q/03 to align with the OSCAR schedule. AMC&D TECHEVAL removed from 3Q/03 and combined with 4Q/03 DT-11A-4 to align with the F/A-18E/F Flight Test Schedule. AMC&D OT changed from 1Q/04 to 2Q/04 to align with the F/A-18E/F overarching test plan.  
 CNS/ATM Mode S Milestone III decision changed from 4Q/02 to 2Q/03 due to VH-3 aircraft availability.  
 CCP Milestones removed because CCP is planned as a NDI system for CNS/ATM integrated solution.  
 JTRS development contract in 3Q/04 is not reflected in the schedule. The Navy is utilizing an Air Force contract vehicle for navy unique requirements (development contract).

(U) Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Common Avionics, APN	67.899	61.774	148.627	169.44	227.755	202.918	183.59	174.596	Continuing	Continuing
0702207N, Depot Maintenance, RDT&E AN/ARC-210 RT-1794(C)	0.694	0	0	0	0	0	0	0	0	8.462

**(U) E. ACQUISITION STRATEGY: \***

Advanced Mission Computer & Display (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 Fixed Price Incentive contract for 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. The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) program is a systems of systems. The program will encompass the integration of various systems that are currently post-MS III. Systems will be procured utilizing existing Navy contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Joint Tactical Radio System (JTRS) is an Air Force lead program. The Navy is utilizing an Air Force contract vehicle for navy unique requirements and a Navy vehicle for integration efforts on the lead platform. TAMMAC Vector Product Format (VPF) is utilizing a Sole source to Harris Corporation, to incorporate the NIMA VPF data into the the existing TAMMAC FRP Hardware. Aircrew Wireless Internal Communication System (AWICS) is employing a full and open competition to procure a common system for use aboard multiple assault, logistics, Rotary Wing and Fixed Wing aircraft.

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prime Hdw Develop, AMC&D OTA845	SS/845	Boeing, St. Louis, MO	54.516								54.516	54.516
Prime Hdw Develop, AMC&D EMD	SS/CP	Boeing, St. Louis, MO	113.179	22.340	11/02	8.890	11/03	4.629	11/04		149.038	149.038
Prime Hdw Develop, LPIA EMD	C/CS	BAE Systems, Wayne, NJ	7.264								7.264	7.264
Prime Hdw Develop, TAMMAC EMD	SS/CPIF	Boeing, St. Louis, MO	26.332								26.332	26.332
Prime Hdw Develop, CNS/ATM EMD	SS/BOA	Litton, Woodland Hills, CA	2.032								2.032	2.032
Prime Hdw Develop, CNS/ATM EMD	SS/CPIF	Rockwell, Cedar Rapids, IA	3.064								3.064	3.064
Prime Hdw Develop, CNS/ATM EMD	C/FPIF	BAE Systems, Greenlawn, NY	2.157								2.157	2.157
Prime Hdw Develop, MCAS EMD	SS/CPFF	BAE Systems, Greenlawn, NY	1.969								1.969	1.969
Prime Hdw Develop, VPF	SS/TBD	Harris, Melbourne, FL		0.493	12/02	2.837	12/03	0.672	12/04		4.002	4.002
Prime Hdw Develop, JTRS	TBD	TBD				5.096	12/03				5.096	
Primary Hardware Development	TBD	TBD		0.100	12/02	0.250	03/04				0.350	
Ancillary Hardware Development												
Training Development												
Aircraft/Ship Integration	WX	NAWCs		0.150	03/03	0.320	03/04	0.199	03/05	Continuing	Continuing	
Aircraft/Ship Integration, CNS/ATM	WX	NAWCs				9.278	04/04	12.493	04/05	Continuing	Continuing	
Aircraft/Ship Integration, JTRS	WX	NAWCs				4.776	03/04	19.879	11/04	Continuing	Continuing	
Ship Suitability												
Systems Engineering	WX	NAWCs		2.276	12/02	3.097	12/03	2.646	12/04	Continuing	Continuing	
Licenses												
Tooling												
GFE												
Award Fees												
Misc			61.470								61.470	
Subtotal Product Development			271.983	25.359		34.544		40.518		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 34 of 48)





**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation, AMC&D	WX	NAWCs	1.733	1.947	11/02	1.569	01/04	0.326	01/05	Continuing	Continuing	
Developmental Test & Evaluation, VPF	WX	NAWCs				0.299	01/04	1.232	01/05			1.531
Developmental Test & Evaluation, AWICS	WX	NAWCs				0.887	03/04					0.887
Operational Test & Evaluation	WX	NAWCs		0.748	11/02	0.086	01/04			Continuing	Continuing	
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Misc			22.162									22.162
Subtotal T&E			23.895	2.695		2.841		1.558		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	WX	NAWCs		0.963	02/03	2.099	02/04	2.668	02/05	Continuing	Continuing	
Government Engineering Support	WX	NAWCs		0.564	12/02	0.805	12/03	0.594	12/04	Continuing	Continuing	
Program Management Support	WX	NAWCs		0.811	11/02	0.576	11/03	0.644	11/04	Continuing	Continuing	
Travel	WX	NAWCs		0.056	11/02	0.050	11/03	0.050	11/04	Continuing	Continuing	
Transportation												
SBIR Assessment			1.057									1.057
Subtotal Management			1.057	2.394		3.530		3.956		Continuing	Continuing	
Remarks:												
Total Cost			318.421	32.323		42.821		46.855		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 36 of 48)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2003</b>										
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
<b>RDT&amp;E, N / BA-5</b>										0604215N, Standard Development										W0572, Joint Services/Navy Standard Avionics Components and Subsystems													
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>							MS III (AV-8B) △		MS III (F/A-18) △																								
<b>Test &amp; Evaluation Milestones</b>																																	
Development Test																																	
Operational Test																																	
<b>Production Milestones</b>																																	
LRIP I FY02	◇																																
LRIP II FY02				◇																													
LRIP III FY03								◇																									
FRP FY04												◇																					
Deliveries																																	

R-1 SHOPPING LIST - Item No. 90

# UNCLASSIFIED



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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE:						
<b>JMPS</b>																										<b>February 2003</b>						
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-5</b>								0604215N, Standards Development								W0572, Joint Services/Navy Standard Avionics Components and Subsystems																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
TAMMAC JUMPS UPC Development		△	△	△						△																						
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																

R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:									
CNS/ATM																								February 2003									
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																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>																																	
Mode S					Production & Install	MS III																											
F/A-18E/F Integration									System Integration								LabTest				V & V												
MH-60S Integration									System Integration								LabTest				V & V												
MH-60R Integration									System Integration								LabTest				V & V												
KC-130J Integration													System Integration								Lab Test				V & V								
E-2C Integration													System Integration								LabTest				V & V								
<b>Production Milestones</b>																																	
Platform Procurements																																	
Deliveries																																	

R-1 SHOPPING LIST - Item No. 90

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**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 41 of 48)





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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
<b>VECTOR PRODUCT FORMAT</b>																																				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-5</b>								0604215N, Standards Development								W0572, Joint Services/Navy Standard Avionics Components and Subsystems																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
VPF Integration Study																																				
Contract Award																																				
Vector Product Development																																				
Software VPF S/W to H/W Intragration																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				

R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003							
AWICS																																
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												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>									MSB △				MSC △																			
Request for Proposals Development																																
Operational Assessment to Downselect to Winner																																
Contract Award																																
<b>Test &amp; Evaluation Milestones</b>																																
Test Readiness Review																																
H53 Developmental Test																																
<b>Production Milestones</b>																																
LRIP 1 FY04																																
Procurements																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 90



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		JTRS																												DATE: February 2003						
		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																										
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>								MS B △																												
<b>Air Force Milestones</b>																																				
JTRS Prototype Phase									[Bar from Q3 2003 to Q4 2006]																											
<b>Air Force Milestones</b>																																				
JTRS Development Milestones								PDR △								CDR △																				
EDM JTRS Delivery																Lab △ 1																				
																△																				
Aircraft Integration Efforts									[Bar from Q1 2004 to Q4 2006]																											
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
<b>Air Force Milestones</b>																																				
LRIP 1 FY 05																																				
				</																																



EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604216N Multi-Mission Helicopter Upgrade Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>141.446</b>	<b>92.831</b>	<b>76.998</b>	<b>79.152</b>	<b>48.587</b>	<b>19.230</b>	<b>14.331</b>	<b>0.228</b>
H1707 MMH Upgrade Development	<b>129.468</b>	<b>87.012</b>	<b>76.998</b>	<b>79.152</b>	<b>48.587</b>	<b>19.230</b>	<b>14.331</b>	<b>0.228</b>
H3053 MH-60S AMCM	<b>11.978</b>							
H9215 MH-60 PMLCC		<b>3.325</b>						
H9216 MH-60 Helicopter FLIR		<b>2.494</b>						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**  
 From program inception through FY99, Project H1707 was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.

H1707 - The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter represents a significant avionics improvement 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. FY02 reflects remanufacture of MH-60R. FY03 and out reflects a new production procurement strategy.

H3053 - 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 system will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.

H9215 - The MH-60R Multi-Mission Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC) (Congressional Add).

H9216 - The MH-60R Multi-Mission Helicopter FLIR housing configuration (Congressional Add).

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Development			PROJECT NUMBER AND NAME H1707 MMH Upgrade Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>129.468</b>	<b>87.012</b>	<b>76.998</b>	<b>79.152</b>	<b>48.587</b>	<b>19.230</b>	<b>14.331</b>	<b>0.228</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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

The MH-60R Multi-Mission Helicopter provides battle group protection and adds significant capability in coastal littorals and regional conflicts. The MH-60R Multi-Mission Helicopter represents a significant avionics improvement 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. FY02 reflect remanufacture of MH-60R. FY03 and out reflects a new production procurement strategy. The MH-60R will be implementing Block Upgrades as part of its evolutionary acquisition strategy.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Develop	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	77.746	52.100	26.400	8.800
RDT&E Articles Quantity				

Avionics 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. ILS support, Program Management support, Risk Management Board support, and subvendor support.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	10.982	12.460	5.825	0.926
RDT&E Articles Quantity				

Completed and delivered Airframe test articles (FY02). Airframe test articles engineering support, GFE repair, and risk management board support. Procurement of Digital Mock-up and weight reduction studies, Integrated Self Detection integration development and vibration testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	16.460	9.759	6.443	4.710
RDT&E Articles Quantity				

Avionics 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).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	13.805	12.193	11.130	4.316
RDT&E Articles Quantity				

MH-60R Mission Avionics testing.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Develop	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.475	0.500	0.400	0.400
RDT&E Articles Quantity				

Avionics Acoustics (including ALFS) processor development, integration and testing. Correct deficiencies encountered during testing and integration in support of DT-IID.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.000			
RDT&E Articles Quantity				

Airframe Dynamic Component engineering and Logistics evaluation and analysis of impacts to the MH-60R design. Continued to build test coupons and perform certification testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			17.500	40.600
RDT&E Articles Quantity				

Avionics Block I Upgrade software and hardware development and integration effort to include: digital torpedo, integrated Satellite Communication Demand Assign Multiple Access Waveform (SATCOM DAMA), low light Multi-Spectral Targeting System Forward Looking Infrared (MTS FLIR) system, RADAR Low Probability of Intercept (LPI) mode development, Link 16, and Joint Mission Planning System (JMPS) migration.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.800	2.600
RDT&E Articles Quantity				

Airframe Block I Upgrade software and hardware development and integration for the right hand extended pylon.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi-Mission Helicopter Upgrade Develop	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.500	6.800
RDT&E Articles Quantity				

Avionics Block I Upgrade engineering specialties, Integrated Logistics Support, Contractor Services Support, Systems Engineering, and Program Management as required.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			5.000	10.000
RDT&E Articles Quantity				

Avionics Mission Block I Upgrade Mission Testing and Evaluation efforts.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		135.381	88.969	52.199	21.053
Current BES/President's Budget		129.468	87.012	76.998	79.152
Total Adjustments		-5.913	-1.957	24.799	58.099
Summary of Adjustments					
Congressional program reductions			-0.530		
Congressional undistributed reductions					
Congressional rescissions		-0.289			
SBIR/STTR Transfer		-2.928			
Economic Assumptions		-0.362	-1.427	-1.917	-1.740
Reprogrammings		-2.334			
Other Navy/OSD Adjustments				26.716	59.839
Congressional increases					
Subtotal		-5.913	-1.957	24.799	58.099
Schedule:					
Milestone III (MS-III) was changed from 3Q/05 to 2Q/05 in accordance with the approved Acquisition Program Baseline (APB) dated 14 March 2002. The current schedule reflects the addition of Lockheed Martin contract award for the Block-I Upgrade effort planned for 2Q/04, the Sikorsky contract award planned for 2Q/04, the addition of Block-I DT-III testing planned for 2Q/04-3Q/06, and OT-III testing planned for 4Q/06-2Q/07.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 91

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> PE 0604216N Multi-Mission Helicopter Upgrade Dev				<b>PROJECT NUMBER AND NAME</b> H1707 MMH Upgrade Development			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1 (BLI - 018200)	14.428	116.960	398.529	431.743	604.193	807.843	1,116.066	1,141.259	3,413.819	8,321.844
APN-6 Initial Spares (BLI-060510)	0.000	0.000	54.719	64.594	89.320	65.706	88.715	0.623	0.000	375.940
<p>Related RDT&amp;E</p> <p>(U) PE 0604507N Enhanced Modular Signal Processor</p> <p>(U) PE 0604212N ASW &amp; Other Helo Development (LAMPS MK-III Data Link)</p> <p>(U) PE 0604261N Acoustic Search Sensors</p> <p>(U) PE 0604216N H-60 Helicopter Components Preventative Maintenance Life Cycle Criteria (PMLCC). PU: H9215</p> <p>(U) PE 0604216N H-60 Helicopter FLIR Housing Configuration. PU: 9216</p>										
<b>E. ACQUISITION STRATEGY:</b>										
<p>The MH-60R acquisition strategy has been revised based on the program restructure, which occurred in FY2002. The restructure encompassed a replan of the EMD-II contract resulting in a change in contract type from Cost Plus Fixed Fee (CPFF) to Cost Plus Award Fee (CPAF) and inclusion of Sikorsky in development efforts. The restructure also extended the test schedule, which will culminate in a Milestone III (MS-III) and Initial Operating Capability (IOC) in FY2005. The program includes an evolutionary acquisition Block I Upgrade effort which is scheduled to begin in FY2004.</p>										
<b>F. MAJOR PERFORMERS:</b>										



**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)							DATE: <b>February 2003</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604216N Multi-Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	Various	Various	103.679	3.004	02/03	1.212	12/03	4.808	12/04	9.808	122.511	
Software Development											0.000	
Integrated Logistics Support	Various	Various	12.566	1.376	02/03	1.712	12/03	0.441	12/04		16.095	
GFE	Various	Various	7.138								7.138	
Subtotal Support			123.383	4.380		2.924		5.249		9.808	145.744	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Various	41.151	12.060	12/02	9.279	12/03				62.490	
Operational Test & Evaluation	WX	NAWC-AD, Pax River	0.961		12/02	1.755	12/03	4.316	12/04		7.032	
Live Fire Test & Evaluation	WX	NAWC-WD, China Lake	1.752	0.133	12/02	0.096	12/03				1.981	
Block I Test & Evaluation	WX	NAWC-AD, Pax River				5.000	12/03	10.000	12/04	36.700	51.700	
Subtotal T&E			43.864	12.193		16.130		14.316		36.700	123.203	
Remarks:												
Contractor Engineering Support	MIPR	CECOM, Ft. Monmouth, NJ	3.296								3.296	
Government Engineering Support	RX	NAWC-AD Pax River	5.233	2.209	12/02	3.019	12/03	3.312	12/04		13.773	
Program Management Support	RX	MISC Activities	5.870	1.470	12/02	1.300	12/03	1.249	12/04	1.168	11.057	
Travel	WX	NAWC-AD Pax River	4.200	1.700	10/02	1.700	10/03	1.700	10/04	0.500	9.800	
SBIR Assessment												
Subtotal Management			18.599	5.379		6.019		6.261		1.668	37.926	
Remarks:												
Total Cost			901.438	87.012		76.998		79.152		82.376	1,226.976	
Remarks:												



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development								PROJECT NUMBER AND NAME H1707 MMH Upgrade Development																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>	LMSI EMD-II REPLAN contract award △				SAC WSIT EMD-II contract award △				LMSI Block-1 Upgrade △ SAC Block-1 Upgrade △				MSC △				IOC ☆															
<b>Test &amp; Evaluation Milestones</b>	DT-IIC				DT-IID				TECHEVAL				Block - 1 Upgrade DT-III A																			
Development Test	[Bar]				[Bar]				[Bar]				[Bar]																			
Operational Test					OT-IIA [Bar]				OT-III A [Bar]				OPEVAL [Bar]				Block - 1 Upgrade OT-III A [Bar]															
<b>Production Milestones</b>									LRIP II Start △				FRP Start △				[Bar]				[Bar]											
LRIP II FY 04									△				△				[Bar]				[Bar]											
FRP Milestone C FY 05																	[Bar]				[Bar]											
Deliveries																	LRIP II (6) ↓				FRP/Lot 3 (10) ↓											

R-1 SHOPPING LIST - Item No. 91

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev			PROJECT NUMBER AND NAME H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLC)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>3.325</b>						
RDT&E Articles Qty								

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

H-60 Helicopter Components Preventative Maintenance Life Cycle Criteria (PMLCC) (Congressional Add). Engineering and Evaluation to assess criteria and development of component upgrades for Life Extension. This program provides funding for engineering and evaluations necessary to assess the Dynamic Components of the aircraft for substantiation of life cycle limitations and/or apply advanced design manufacturing and materials for the extension for component life.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.325		
RDT&E Articles Quantity				

Preventative Maintenance Life Cycle Criteria (PMLCC) of H-60 Helicopter Components (Congressional Add).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	PROJECT NUMBER AND NAME H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	3.325	0.000	0.000
Total Adjustments		0.000	3.325	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.020		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.055		
Reprogrammings					
Congressional increases			3.400		
Other Navy/OSD Adjustment					
Subtotal		0.000	3.325	0.000	0.000
Schedule:					
Not applicable.					
Technical:					
Not applicable.					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Developmen			PROJECT NUMBER AND NAME H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1 (BLI - 018200)	14.428	116.960	398.529	431.743	604.193	807.843	1,116.066	1,141.259	3,413.819	8,321.844
APN-6 Initial Spares (BLI-060510)	0.000	0.000	54.719	64.594	89.320	65.706	88.715	0.623	0.000	375.940
<p>Related RDT&amp;E (U) 0604216N, H1707, MH-60R Multi-Mission Helicopter Upgrade Development</p>										
<b>E. ACQUISITION STRATEGY:</b>										
<b>F. MAJOR PERFORMERS:</b>										

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Development			PROJECT NUMBER AND NAME H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604216N Multi-Mission Helicopter Upgrade Dev				H9215 H-60 Helicopter Preventative Maintenance Life Cycle Creteria (PMLCC)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Engineering Analysis	CPFF	CTC, Johnstown, PA	0.000	3.325	05/03						3.325	3.325
Subtotal Support			0.000	3.325		0.000		0.000		0.000	3.325	
Remarks:												



CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604216N Multi-Mission Helicopter Upgrade Dev				H9215 H-60 Helicopter Preventative Maintenance Life Cycle Criteria (PMLCC)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	3.325		0.000		0.000		0.000	3.325	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-5</b>								0604216N Multi-Mission Helicopter Upgrade Development								H9215 H-60 Helicopter Preventative Maintenance Life Cycle Creteria (PMLCC)																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>							△	CTC contract award							☆	Delivery																				

R-1 SHOPPING LIST - Item No. 91

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev			PROJECT NUMBER AND NAME H9216 H-60 Helicopter FLIR Housing Configuration			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>2.494</b>						
RDT&E Articles Qty								

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

H-60 Helicopter FLIR Housing Configuration (Congressional Add). The configuration design of the MH-60 poses operational and pre-mature failure issues. Current design requires the Forward Looking Infrared (FLIR) to be mounted upside down from its intended design. This configuration precludes a look down capability for the FLIR and has allowed water penetration, which is causing corrosion on internal components. A design of the aircraft nose/FLIR interface that would provide for look down FLIR capability and thus improved operational reliability is needed. This funding will attempt to achieve commonality of the design for the MH-60 series helicopters. The design would also include considerations to improve the longitudinal center of gravity of the aircraft-shifting it forward. The design would be an integrated aircraft structure that could be manufactured as a kit for assembly to the main aircraft structure.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H9216 H-60 Helicopter FLIR Housing Configuration

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		2.494		
RDT&E Articles Quantity				

H-60 Helicopter FLIR Housing Configuration (Congressional Add).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	PROJECT NUMBER AND NAME H9216 H-60 Helicopter FLIR Housing Configuration			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	2.494	0.000	0.000
Total Adjustments		0.000	2.494	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.015		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.041		
Reprogrammings					
Congressional increases			2.550		
Other Navy/OSD Adjustments					
Subtotal		0.000	2.494	0.000	0.000
Schedule:					
Not applicable.					
Technical:					
Not applicable.					

R-1 SHOPPING LIST - Item No. 91

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	PROJECT NUMBER AND NAME H9216 H-60 Helicopter FLIR Housing Configuration
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1 (BLI - 018200)	14.428	116.960	398.529	431.743	604.193	807.843	1,116.066	1,141.259	3,413.819	8,321.844
APN-6 Initial Spares (BLI-060510)	0.000	0.000	54.719	64.594	89.320	65.706	88.715	0.623	0.000	375.940

Related RDT&E  
(U) 0604216N, H1707, MH-60R Multi-Mission Helicopter Upgrade Development

**E. ACQUISITION STRATEGY:**

**F. MAJOR PERFORMERS:**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Development				PROJECT NUMBER AND NAME H9216 H-60 Helicopter FLIR Housing Configuration				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Dev				H9216 H-60 Helicopter FLIR Housing Configuration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Engineering Analysis	CPFF	CTC, Johnstown, PA		2.494	05/03						2.494	2.494
Subtotal Support			0.000	2.494		0.000		0.000		0.000	2.494	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Dev				H9216 H-60 Helicopter FLIR Housing Configuration					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	2.494		0.000		0.000		0.000	2.494	
Remarks:												

R-1 SHOPPING LIST - Item No. 91

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-5</b>								0604216N Multi-Mission Helicopter Upgrade Development								H9216 H-60 Helicopter FLIR Housing Configuration																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>							△	CTC contract award							☆	Delivery																				

R-1 SHOPPING LIST - Item No. 91

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

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-4a, Schedule Detail							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;BA-5</b>	0604216N Multi-Mission Helicopter Upgrade Developmen				H9216 H-60 Helicopter FLIR Housing Configuration				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
CTC - Contract Award Analysis Report Delivery		3Q		1Q					

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604217N S-3 Weapon System Improvement			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>0.401</b>	<b>0.413</b>						
H0489 S-3 WSIP	<b>0.401</b>	<b>0.413</b>						

**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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604217N S-3 WSIP			PROJECT NUMBER AND NAME H0489 S-3 WSIP			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.401</b>	<b>0.413</b>						
RDT&E Articles Qty								

**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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604217N S-3 WSIP	PROJECT NUMBER AND NAME H0489 S-3 WSIP

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.401	0.413	0.000	0.000
RDT&E Articles Quantity				

Support of Ada operational software development and testing.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604217N S-3 WSIP	H0489 S-3 WSIP

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.424	0.422		
Current BES/President's Budget	0.401	0.413		
Total Adjustments	-0.023	-0.009		

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.003		
Congressional rescissions	-0.001			
SBIR/STTR Transfer	-0.013			
Economic Assumptions	-0.001	-0.006		
Reprogrammings	-0.008			
Other Navy/OSD Adjustments				
Reprioritization of requirements				
Congressional increases				
Subtotal	-0.023	-0.009		

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 92

# UNCLASSIFIED



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604217N S-3 WSIP	PROJECT NUMBER AND NAME H0489 S-3 WSIP
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Line Item #34 APN S-3 OSIP (04-96)	5.429	2.529	0.110							8.068

**(U) E. 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.

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE Program Element (PE) No. and Name: 0604218N Air/Ocean Equipment Engineering					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	17.167	6.386	7.555	4.309	4.779	4.827	5.863	5.971	6.081	CONT	CONT
X2345 Fleet METOC Equipment	12.415	4.964	4.090	3.079	3.443	3.453	4.200	4.277	4.356	CONT	CONT
X2346 METOC Sensor Engineering	4.752	1.422	1.509	1.230	1.336	1.374	1.663	1.694	1.725	CONT	CONT
X9217 SPY-1 Radar Tactical Environmental Processor (TEP)		0.000	1.956	0.000	0.000	0.000	0.000	0.000	0.000		1.956
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> 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.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b> This program is funded under ENGINEERING &amp; MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision. A congressional plus up for SPY-1 Radar Tactical Environmental Processor (TEP) is provided for FY03.</p>											

R-1 SHOPPING LIST - Item No. 93

# UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 27)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604218N Air/Ocean Equipment Engineering				PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	12.415	4.964	4.090	3.079	3.443	3.453	4.200	4.277	4.356	Continuing	Continuing
RDT&E Articles Qty											0
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> 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.</p>											

R-1 SHOPPING LIST - Item No. 93

# UNCLASSIFIED

**Exhibit R-2a, RDTE Project Justification**  
(Exhibit R-2a, page 2 of 27)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment

**(U) B. Accomplishments/Planned Program**

Object Oriented Data base Management	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.447	1.166	0.781	0.918
RDT&E Articles Quantity				

FY02: Continued engineering development of an object oriented database management system employing artificial intelligence technology.  
 FY03: Complete engineering development of an object oriented database management system employing artificial intelligence technology Transition to web-enabled high-speed battlegroup data server.  
 FY04: Continue transition to web-enabled high-speed battlegroup data server.  
 FY05: Complete transition to web-enabled high-speed battlegroup data server. Spiral development of Object Oriented Database Management engineering for next generation data server employing expert system techniques.

Fleet System Engineering	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.515	1.216	0.954	1.015
RDT&E Articles Quantity				

FY02: Continued engineering development of fleet systems.  
 FY03-FY05: Continue engineering development of fleet systems.

Lead Laboratory	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.781	0.631	0.539	0.627
RDT&E Articles Quantity				

FY02: Continued Lead Laboratory tasks of software integration, assisted model developers and provided technical assistance to other activities.  
 FY03-05: Continue Lead Laboratory tasks of software integration, assisting model developers and provide technical assistance to other activities.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment

**(U) B. Accomplishments/Planned Program**

Off-the-Shelf Technology	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.221	1.077	0.805	0.883
RDT&E Articles Quantity				

FY02: Continued exploitation of off-the-shelf prototype hardware and other emerging technologies.  
 FY03-FY05: Continue exploitation of off-the-shelf prototype hardware and other emerging technologies.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>FEBRUARY 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget	4.785	4.182	-	-
Current BES/President's Budget	4.964	4.090	3.079	3.443
Total Adjustments	0.179	(0.092)		

Summary of Adjustments

Sec 313 PL 107-206: Revised Economic Assumption	(0.010)	-	-	-
Business Reform (SEC 8100)	-	(0.017)	-	-
Economic Assumptions (SEC 313 PL 107-206)	(0.013)	-	-	-
Economic Assumptions (SEC 8135)	-	(0.023)	-	-
IT Cost Growth	-	(0.008)	-	-
Miscellaneous Department Adjustments	0.339	(0.044)	-	-
Sec 8123: Management Reform Initiative	(0.042)	-	-	-
FY2002 SBIR	(0.095)	-	-	-
Subtotal	0.179	(0.092)	0.000	0.000

(U) Schedule:  
Not Applicable

(U) Technical:  
Not Applicable

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2003</b>																									
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604218N Air Ocean Equipment Engineering			<b>PROJECT NUMBER AND NAME</b> X2345 Fleet METOC Equipment																										
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. &amp; Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2002</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2003</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2004</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2005</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2006</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2007</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">To Complete</th> <th style="text-align: right; border-bottom: 1px solid black;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 4226 METEOROLOGICAL EQUIPMEN</td> <td style="text-align: right;">28.405</td> <td style="text-align: right;">26.515</td> <td style="text-align: right;">25.658</td> <td style="text-align: right;">20.258</td> <td style="text-align: right;">25.922</td> <td style="text-align: right;">22.714</td> <td style="text-align: right;">27.385</td> <td style="text-align: right;">30.661</td> <td style="text-align: right;">CONT</td> <td style="text-align: right;">CONT</td> </tr> </tbody> </table> <p>Related RDT&amp;E: PE 0603207N, Air/Ocean Tactical Applications.</p> <p><b>(U) E. ACQUISITION STRATEGY:</b></p> <p>Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to Naval Research Laboratories and miscellaneous contractors, with management oversight by SPAWAR.</p> <p><b>(U) F. MAJOR PERFORMERS:</b></p> <p>N/A</p>											Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost	OPN 4226 METEOROLOGICAL EQUIPMEN	28.405	26.515	25.658	20.258	25.922	22.714	27.385	30.661	CONT	CONT
Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost																						
OPN 4226 METEOROLOGICAL EQUIPMEN	28.405	26.515	25.658	20.258	25.922	22.714	27.385	30.661	CONT	CONT																						

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X2345 Fleet METOC Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	NRL	5.172	1.215	NA	0.862	NA	1.110	NA	CONT	CONT	
	WX	SSCs	2.077	0.775	NA	0.439	NA	0.446	NA	CONT		
	CP	RAYTHEON	1.046	0.235	NA	0.221	NA	0.224	NA	CONT		
	NA	MISC	7.844	1.647	NA	1.339	NA	1.445	NA	CONT		
Subtotal Product Development			16.139	3.872		2.861		3.225		0.000	26.097	
Remarks:												
Development Support	CP	SSA	1.000	0.156	TBD	0.156	TBD	0.156	TBD	CONT	CONT	
Subtotal Support			1.000	0.156		0.156		0.156		0.000	1.468	
Remarks:												



# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X2345 Fleet METOC Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	PD	OPTEVFOR	0.240	0.062	N/A	0.062	N/A	0.062	N/A	CONT	CONT	
Subtotal T&E			0.240	0.062		0.062		0.062		0.000	0.426	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			17.379	4.090		3.079		3.443		0.000	27.991	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>FEBRUARY 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering								PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
Obj Oriented DBMS (Database Management System)	Data Exchange Interface				Web Enabled Data Server												High Speed BG Server				Emerging DBMS Technologies											
Fleet Sys Engineering	Sys Engineering Upgrades																															
Lead Laboratory	SW Engineering																															
Off-the-Shelf Technology	LINUX Cluster				Huge Data Set Transfer								3/4-D Visual Accelerators				Emerging Technologies															

R-1 SHOPPING LIST - Item No. 93

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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604218N Air Ocean Equipment Engineering				PROJECT NUMBER AND NAME X2345 Fleet METOC Equipment			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Obj Oriented Database Management System (DBMS)	4Q			2Q		3Q		3Q
Fleet Sys Engineering	4Q	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Lead Laboratory	4Q	4Q	4Q	4Q	4Q	4Q	4Q	4Q
Off-the-Shelf Technology			1Q		1Q		2Q	

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604218N Air/Ocean Equipment Engineering				PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	4.752	1.422	1.509	1.230	1.336	1.374	1.663	1.694	1.725	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering

**(U) B. Accomplishments/Planned Program**

Unmanned Aerial Vehicle METOC Sensors	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.416	0.406	0.345	0.352
RDT&E Articles Quantity				

FY02: Continued engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.  
 FY03: Continue engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.  
 FY04: Complete engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles. Begin engineering development of miniaturized sensor suite for mini/micro Unmanned Airborne Vehicles.  
 FY05: Continue engineering development of miniaturized sensor suite for mini/micro Unmanned Airborne Vehicles.

Clandestine Sensors	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.291	0.400	0.330	0.347
RDT&E Articles Quantity				

FY02: Completed development of micro sensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical Systems (MEMS).  
 FY03: Continue spiral development of micro sensor based miniature weather stations and engineering development to include autonomous clandestine sensors for measurements in denied areas.  
 FY04: Continue spiral development of micro sensor based miniature weather stations and engineering development to include autonomous clandestine sensors for measurements in denied

MEASURE (Battlespace devices)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.383	0.310	0.347
RDT&E Articles Quantity				

FY02: Continued development of Metoc Air, Surface, Undersea Reporting Equipment (MEASURE) which included sensors and processing/distribution devices that detect, characterize and distribute meteorological and oceanographic data from the battlespace.  
 FY03-FY05: Continue development of MEASURE which includes sensors and processing/distribution devices that detect, characterize and distribute meteorological and oceanographic data from the battlespace.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering

**(U) B. Accomplishments/Planned Program**

Unmanned Underwater Vehicle Sensors	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.315	0.320	0.245	0.290
RDT&E Articles Quantity				

FY02: Began engineering development of intelligent sensor suite for Unmanned Undersea Vehicles.  
 FY03: Complete engineering development of intelligent sensor suite for Unmanned Undersea Vehicles.  
 FY04: Spiral development of engineering for intelligent sensor suite for tactical acoustic measurement buoys.  
 FY05: Spiral development of Unmanned Underwater Vehicle Sensors engineering for tactical acoustic measurement buoy.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget		1.561	1.543	-	-
Current BES/President's Budget		1.422	1.509	1.230	1.336
Total Adjustments		-0.139	-0.034		
Summary of Adjustments					
Sec 313 PL 107-206: Revised Economic Assumption		(0.003)	-	-	-
Business Reform (SEC 8100)		-	(0.006)	-	-
Economic Assumptions (SEC 8135)		(0.004)	(0.009)	-	-
Economic Assumptions (SEC 8135)		-	-	-	-
IT Cost Growth		-	(0.003)	-	-
Sec 8123: Management Reform Initiative		(0.014)	-	-	-
Miscellaneous Department Adjustments		(0.083)	(0.016)	-	-
FY2002 SBIR		(0.035)	-	-	-
Subtotal		-0.139	-0.034	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-5</b>	0604218N Air Ocean Equipment Engineering	X2346 METOC Sensor Engineering	
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <p>Related RDT&amp;E: PE 0603207N (Air/Ocean Tactical Applications), PE0602435N (Ocean and Atmospheric Technology)</p> <p><b>(U) E. ACQUISITION STRATEGY:</b></p> <p>Acquisition and contracting strategies are to support 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 by providing funds to NAVAIR and miscellaneous contractors, with management oversight by SPAWAR.</p> <p><b>(U) F. MAJOR PERFORMERS:</b></p> <p>N/A</p>			

R-1 SHOPPING LIST - Item No. 93

**UNCLASSIFIED**



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X2346 METOC Sensor Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	NRL	1.261	0.053	NA	0.053	NA	0.053	NA	CONT	CONT	
	NA	MISC	4.913	1.456	NA	1.177	NA	1.283	NA		8.829	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			6.174	1.509		1.230		1.336		0.000	10.249	
Remarks:												
Development Support				0.000		0.000		0.000			0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X2346 METOC Sensor Engineering						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.000	0.000		0.000		0.000			0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			6.174	1.509		1.230		1.336		0.000	10.249	
Remarks:												

R-1 SHOPPING LIST - Item No. 93

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 17 of 27)

**UNCLASSIFIED**

2

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>FEBRUARY 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering								PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
UAV METOC Sensors (Unmanned Aerial Vehicle)	Ultralight UAV Sensors								Global Hawk Aircraft Integration												Micro-sensor Package											
Clandestine Sensors	MEMS Engineering								Autonomous Sensor Engineering												Air Deployed Micro-sensors											
MEASURE	MEASURE Interface								Wave Buoy Upgrades												Tactical Acoustic Buoy											
UUV Sensors Unmanned Underwater Vehicle					ARIES AUV (Autonomous Unmanned Vehicle)				Micro AUV												Stealth AUV											

R-1 SHOPPING LIST - Item No. 93

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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604218N Air Ocean Equipment Engineering				PROJECT NUMBER AND NAME X2346 METOC Sensor Engineering			
<b>Schedule Profile</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
Unmanned Aerial Vehicle (UAV) METOC Sensors			1Q			3Q		3Q
Clandestine Sensors	4Q			4Q			4Q	
<b>MEASURE</b>		3Q		4Q			1Q	
Unmanned Underwater Vehicle (UUV) Sensors			1Q		1Q		2Q	

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604218N Air/Ocean Equipment Engineering				PROJECT NUMBER AND NAME X9217 SPY-1 Tactical Environmental Processor (TEP)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	1.956	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.956
RDT&E Articles Qty											0

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides for the SPY-1 Tactical Environmental Processor (TEP) , an operational system which provides timely characterization of rapidly changing environment surrounding the battlegroup, to automatically optimize weapon and sensor performance and to supply the tactical decision maker with accurate assessment of the capability for the weapon system to complete its mission. The U.S. Navy in partnership has developed an advanced radar processor that extracts detailed environmental weather measurements ( currently considered radar clutter) from existing surveillance radars. Using normally scheduled radar dwells, TEP simultaneously generates both real spectral moment measurements of the environment surrounding the battlegroup to create high-resolution weather radar data comparable to that of NEXRAD, the National Weather Service's most advanced Doppler radar. It also generates real-time clutter characterization for use in optimizing weapons and sensors, and for identifying factors limiting their performance.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X9217 SPY-1 Tactical Environmental Processor (TEP)

**(U) B. Accomplishments/Planned Program**

SPY-1 Tactical Environmental Processor (TEP)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.956	0.000	0.000
RDT&E Articles Quantity				

FY03: Complete upgrade for prototype hardware and software to operational status to provide operational status for meteorological conditions.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering	PROJECT NUMBER AND NAME X9217 SPY-1 Tactical Environmental Processor (TEP)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Congressional Add		-	2.000	-	-
Current BES/President's Budget		-	1.956	-	-
Total Adjustments		-	-0.044	-	-
Summary of Adjustments					
Business Reform (SEC 8100)		-	(0.008)	-	-
Economic Assumptions (SEC 8135)		-	(0.011)	-	-
IT Cost Growth		-	(0.004)	-	-
Miscellaneous Department Adjustments		-	(0.021)	-	-
Subtotal		0.000	-0.044	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 93

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>FEBRUARY 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-5</b>	0604218N Air Ocean Equipment Engineering	X9217 SPY-1 Tactical Environmental Processor (TEP)	
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <p>Related RDT&amp;E: PE 0603207N (Air/Ocean Tactical Applications), PE0602435N (Ocean and Atmospheric Technology)</p> <p><b>(U) E. ACQUISITION STRATEGY:</b></p> <p>Acquisition and contracting strategies are to support 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 by providing funds to NAVAIR and miscellaneous contractors, with management oversight by SPAWAR.</p> <p><b>(U) F. MAJOR PERFORMERS:</b></p> <p>N/A</p>			

R-1 SHOPPING LIST - Item No. 93

**UNCLASSIFIED**



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X9217 SPY-1 Tactical Environmental Processor (TEP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	WX	SSC SD	0.000	0.200	NA	0.000	NA	0.000	NA		0.200	
Software Engineering	PD	NAVSEA/LOCKHEED MART	0.000	1.756	NA	0.000	NA	0.000	NA		1.756	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	1.956		0.000		0.000		0.000	1.956	
Remarks:												
Development Support				0.000		0.000		0.000			0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604218N Air Ocean Equipment Engineering			X9217 SPY-1 Tactical Environmental Processor (TEP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.000	0.000		0.000		0.000			0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	1.956		0.000		0.000		0.000	1.956	

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>FEBRUARY 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604218N Air Ocean Equipment Engineering										PROJECT NUMBER AND NAME X9217 SPY-1 Tactical Environmental Processor (TEP)												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
Spy-1 Tactical Environmental Processor	SYSTEM ENGINEERING AND DESIGN				▲————▲																											

R-1 SHOPPING LIST - Item No. 93

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



EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604221N P-3 Modernization Program			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>6.014</b>	<b>2.297</b>	<b>7.306</b>	<b>6.785</b>	<b>2.261</b>	<b>2.299</b>	<b>2.343</b>	<b>2.385</b>
H1152 P-3 Sensor Integration	<b>6.014</b>	<b>2.297</b>	<b>7.306</b>	<b>6.785</b>	<b>2.261</b>	<b>2.299</b>	<b>2.343</b>	<b>2.385</b>

**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 Emmitter Identification (SEI); improved APS-137 radar tracking and upgrades; and P-3 Off-the-Shelf Readiness Improvements. The P-3C Sensor Integration project provides for the technology insertion support necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software technology 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 under the "Extended Echo Ranging (EER) family of Mult-Static active sensor systems".

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604221N P-3 Modernization Program			PROJECT NUMBER AND NAME H1152 P-3 Sensor Integration			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	6.014	2.297	7.306	6.785	2.261	2.299	2.343	2.385
RDT&E Articles Qty								

**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); improved APS-137 radar tracking and upgrades; and P-3 Off-the-Shelf Readiness Improvements. The P-3C Sensor Integration project provides for the technology insertion support necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software technology 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 under the "Extended Echo Ranging (EER) family of Multi-Static active sensor systems".

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604221N P-3 Modernization Program	PROJECT NUMBER AND NAME H1152 P-3 Sensor Integration		
<b>(U) B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.014	2.297	2.806	2.085
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px; margin-top: 5px;">                     System engineering support for integration of EER family of Multi-Static active sensor system.                 </div>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.500	4.700
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px; margin-top: 5px;">                     P-3 Off-the-Shelf Readiness Improvements integration and testing.                 </div>				

R-1 SHOPPING LIST - Item No. 94

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604221N P-3 Modernization Program	H1152 P-3 Sensor Integration

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	3.192	2.348	3.259	2.495
Current BES/President's Budget	6.014	2.297	7.306	6.785
Total Adjustments	2.822	-0.051	4.047	4.290

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.013		
Congressional rescissions	-0.007			
SBIR/STTR Transfer	-0.096			
Economic Assumptions	-0.009	-0.038	-0.187	-0.155
Reprogrammings				
Other Navy/OSD Adjustments	2.934		4.234	4.445
Reprioritization of requirements				
Congressional Increases				
Subtotal	2.822	-0.051	4.047	4.290

(U) Schedule:

The following milestones were reported incorrectly and are not included in this submission: IEER operational assessment (OA), AEER P-3C software development, IEER DT/OT and Swalas/Tamda. They are related to the ASW Sensor & processing development efforts. The P-3 Sensor integration takes the developed technologies and integrates them into the P-3. The milestones now reflect this integrated support and insertion of technology under "Extended Echo Ranging (EER) family of multi-static active sensor systems".

(U) Technical:

Not Applicable



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604221N P-3 Modernization Program			PROJECT NUMBER AND NAME H1152 P-3 Sesnor Integration				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI#36 P-3 Readiness Improvements (OSIP 04-04)			14.056	19.904	35.973	36.895	38.018	39.022	489.589	673.457
<b>(U) E. ACQUISITION STRATEGY:</b>										
<p>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>										

R-1 SHOPPING LIST - Item No. 94

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604221N P-3 Modernization Program			H1152 P-3 Sensor Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development (EER)	C/FP	Raytheon, McKinney, Tx	6.425								6.425	6.425
Systems Engineering	Various	Various	28.160	1.067	01/03	1.181	01/04	0.920	01/05	Continuing	Continuing	
Systems Engineering	TBD	TBD				4.500	01/04	4.700	01/05	0.000	9.200	9.200
Subtotal Product Development			34.585	1.067		5.681		5.620		Continuing	Continuing	
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
Software Development	WX	NAWCAD, Pax River, MD	2.266	0.324	01/03	0.405	01/04	0.398	01/05	Continuing	Continuing	
Subtotal Support			24.606	0.324		0.405		0.398		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 94

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 6 of 9)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604221N P-3 Modernization Program			H1152 P-3 Sensor Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E												
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River, MD	11.810	0.906	01/03	1.220	01/04	0.767	01/05	Continuing	Continuing	
											0.000	
Subtotal Management			11.810	0.906		1.220		0.767		Continuing	Continuing	
Remarks:												
Total Cost			71.001	2.297		7.306		6.785		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604221N P-3 Modernization Program								PROJECT NUMBER AND NAME H1152 P-3 Sensor Integration																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	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	
EER Multi-Static Active Sensor System Support				△																													
EER Fleet Technology Insertion					△																												
P-3 Off-the-Shelf Readiness Improvements Integration and Test (RDT&E)									△	—————→							▽																
P-3 Readiness Improvements Kit Acquisitions (APN)									△	—————→							◻	—————→															

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



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA 5</b>						R-1 ITEM NOMENCLATURE 0604230N Naval Support System					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	0.000	0.000	0.000	1.466	1.958	2.450	2.449	1.224	1.224	Continuing	Continuing
X4011 Naval Coastal Warfare	0.000	0.000	0.000	1.466	1.958	2.450	2.449	1.224	1.224	Continuing	Continuing
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                      The Naval Coastal Warfare (NCW) community consists of Mobile Inshore Undersea Warfare (MIUW) units and Harbor Defense Command (HDC) units operating Reserve Mobile Ashore Support Terminals (RMAST). NCW also includes Inshore Boat Units (IBU) and Mobile Security Force (MSF), which are separately funded.</p> <p>The Mobile Inshore Undersea Warfare - System Upgrade (MIUW-SU), the primary system used by the NCW MIUW Units, is the only land-based and rapidly deployable mobile Navy system with the ability to conduct surface and subsurface surveillance in coastal and littoral areas. The system provides detailed contact information via various C4I systems to the tactical area commander based on radar, visual, thermal, electronic, and underwater acoustic sensor information. Missions supported with the MIUW-SU's are: OCONUS and INCONUS Force Protection, protecting port areas, high value assets, and surveilling the near shore areas. The RMAST is the C4ISR hub for the NCW Commander. RMASTs deploy to support Force Protection/Force Security Officer for Commander, Amphibious Group in its Harbor Defense and Coastal Sea Control missions.</p> <p>In the aftermath of the attack on USS COLE and particularly post 11 SEP, the role, structure, and utilization for the NCW program has changed appreciably and continues to evolve in the face of developing world events. However, the core competencies resident in expeditionary NCW forces to conduct surveillance, C4I and patrol/interdiction have not changed. NCW remains a specialized force constituted to accomplish specific tasks under specific conditions, but also agile enough to fill emergent and non-traditional roles. Post 11 SEP, NCW Groups and Units have been mobilized to perform force protection missions at different levels in all CinC AOR's and within the continental United States in support of Maritime Homeland Security.</p>											

R-1 SHOPPING LIST - Item No. 95

# UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 10)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	R-1 ITEM NOMENCLATURE 0604230N Naval Support System	
<p>This RDT&amp;E exhibit supports the future direction of Naval Coastal Warfare as it is being determined externally by world events and internally by the progress of DoD initiatives to replace Cold War forces and capabilities with 21st century "transformational" forces and capabilities. NCW forces currently field legacy systems designed to counter more traditional military threats in a two Major Theater War scenario. Recent operations and contingencies have shown that there is no credible shallow water subsurface capability currently in existence. Future NCW forces will develop in to a highly effective, relatively low cost transformational force capable of operating anywhere in the world to perform a spectrum of force protection missions ranging from full scale port security/harbor defense operations during wartime to short duration point defense of high value units or facilities in operations other than war. This transformational force will be agile, tailorable, and scalable and will use applied technology to quickly detect, deter or interdict potential threats to DoN assets in the littoral environment. Next generation surface and subsurface surveillance systems, as well as enhanced C4I capabilities, are required to meet these operational objectives. These capabilities must be interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.</p> <p>U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEMS 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. 95

**UNCLASSIFIED**

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

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System				PROJECT NUMBER AND NAME X4011 Naval Coastal Warfare					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>1.466</b>	<b>1.958</b>	<b>2.450</b>	<b>2.449</b>	<b>1.224</b>	<b>1.224</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											<b>0</b>

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

The Naval Coastal Warfare (NCW) community consists of Mobile Inshore Undersea Warfare (MIUW) units and Harbor Defense Command (HDC) units operating Reserve Mobile Ashore Support Terminals (RMAST). NCW also includes Inshore Boat Units (IBU) and Mobile Security Force (MSF), which are separately funded.

The Mobile Inshore Undersea Warfare - System Upgrade (MIUW-SU), the primary system used by the NCW MIUW Units, is the only land-based and rapidly deployable mobile Navy system with the ability to conduct surface and subsurface surveillance in coastal and littoral areas. The system provides detailed contact information via various C4I systems to the tactical area commander based on radar, visual, thermal, electronic, and underwater acoustic sensor information. Missions supported with the MIUW-SU's are: OCONUS and INCONUS Force Protection, protecting port areas, high value assets, and surveilling the near shore areas. The RMAST is the C4ISR hub for the NCW Commander. RMASTs deploy to support Force Protection/Force Security Officer for Commander, Amphibious Group in its Harbor Defense and Coastal Sea Control missions.

In the aftermath of the attack on USS COLE and particularly post 11 SEP, the role, structure, and utilization for the NCW program has changed appreciably and continues to evolve in the face of developing world events. However, the core competencies resident in expeditionary NCW forces to conduct surveillance, C4I and patrol/interdiction have not changed. NCW remains a specialized force constituted to accomplish specific tasks under specific conditions, but also agile enough to fill emergent and non-traditional roles. Post 11 SEP, NCW Groups and Units have been mobilized to perform force protection missions at different levels in all CinC AOR's and within the continental United States in support of Maritime Homeland Security.

This RDT&E exhibit supports the future direction of Naval Coastal Warfare as it is being determined externally by world events and internally by the progress of DoD initiatives to replace Cold War forces and capabilities with 21st century "transformational" forces and capabilities. NCW forces currently field legacy systems designed to counter more traditional military threats in a two Major Theater War scenario. Recent operations and contingencies have shown that there is no credible shallow water subsurface capability currently in existence. Future NCW forces will develop in to a highly effective, relatively low cost transformational force capable of operating anywhere in the world to perform a spectrum of force protection missions ranging from full scale port security/harbor defense operations during wartime to short duration point defense of high value units or facilities in operations other than war. This transformational force will be agile, tailorable, and scalable and will use applied technology to quickly detect, deter or interdict potential threats to DoN assets in the littoral environment. Next generation surface and subsurface surveillance systems, as well as enhanced C4I capabilities, are required to meet these operational objectives. These capabilities must be interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System	PROJECT NUMBER AND NAME X4011 Naval Coastal Warfare

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.440	0.490
RDT&E Articles Quantity				

**FY04:** Perform systems engineering analysis and integration activities associated with next generation surveillance and C4I systems with focus on integration of existing joint, service, and non – DoD systems. **FY05:** Refine configuration management baselines and acquisition strategy to ensure cost effective solutions are transitioned into production.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.026	0.978
RDT&E Articles Quantity				

**FY04:** Begin analysis, architectural design, and design review processes. Conduct requirements traceability analysis to ensure operational requirements are adequately captured in performance and design specifications. Develop acquisition strategy based on requirements. Conduct Preliminary Design Review (PDR) on hardware and software components. **FY05:** Utilize analysis, architectural design, and design review processes to design, develop, document, and implement surface / surveillance sensors and C4I system upgrades. Conduct Critical Design Review (CDR) on hardware and software components.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.490
RDT&E Articles Quantity				

**FY05:** Perform initial development testing of hardware and software components.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System	PROJECT NUMBER AND NAME X4011 Naval Coastal Warfare
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	0.000	0.000		
Current BES/President's Budget	0.000	0.000	1.466	1.958
Total Adjustments	0.000	0.000	0.000	0.000

Summary of Adjustments

Subtotal	0.000	0.000	0.000	0.000
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(U) Schedule:  
Not Applicable

(U) Technical:  
Not Applicable

R-1 SHOPPING LIST - Item No. 95

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604230N Naval Support System			PROJECT NUMBER AND NAME X4011 Naval Coastal Warfare				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 8120 Naval Coastal Warfare	0.000	8.441	35.036	35.309	9.485	5.143	5.344	5.462	CONT	CONT
OMN Naval Coastal Warfare (MIUW)	3.500	3.976	3.885	3.991	4.756	3.929	4.094	4.201	CONT	CONT
 <b>(U) E. ACQUISITION STRATEGY:</b>										
Not Applicable										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA 5</b>			0604230N Naval Support System			X4011 Naval Coastal Warfare						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development (Product Development)								0.978	TBD	CONT.	CONT.	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering						1.466	TBD	0.490	TBD	CONT.	CONT.	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		1.466		1.468		CONT.	CONT.	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA 5</b>			0604230N Naval Support System			X4011 Naval Coastal Warfare						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation								0.490	TBD	Cont.	Cont.	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.490		Cont.	Cont.	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		1.466		1.958		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 95

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 10)





EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604231N - TACTICAL COMMAND SYSTEM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	64.068	68.768	68.805	60.460	63.161	60.303	62.811	65.315
E2213 MISSION PLANNING	23.593	24.099	25.300	18.759	14.782	8.736	8.894	9.042
W9123 FORCENET	0.000	12.509	14.654	15.669	17.155	19.099	21.053	23.001
X0486 GCCS-M TACMOBILE	1.540	1.437	1.317	1.229	1.264	1.497	1.523	1.552
X0521 GCCS-M INTELLIGENCE APPLICATIONS	6.400	3.033	2.601	2.986	3.306	3.991	4.066	4.142
X0709 GCCS-M MARITIME APPLICATIONS	6.801	5.825	7.468	6.099	7.942	8.571	8.732	8.895
X2009 TRUSTED INFORMATION SYSTEMS	3.815	2.906	2.146	1.492	2.147	1.836	1.659	1.482
X2305 GCCS-M COMMON APPLICATIONS	10.429	12.486	10.964	9.197	12.879	11.759	11.980	12.206
X2306 NAVAL SIMULATION SYSTEM	3.243	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X2307 INTEGRATED SHIPBOARD NETWORK SYST	3.457	1.567	1.041	1.697	1.246	1.373	1.398	1.424
X3032 NTCSS ENTERPRISE DATABASE AND MLDN	4.790	4.906	3.314	3.332	2.440	3.441	3.506	3.571
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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 TIS 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 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 is a multi-warfare, object oriented, Monte Carlo simulation system. NSS provides the Fleet a capability to evaluate alternate Courses of Action (COA) and C4ISR architectures and supports the Joint Forces Air Component Commander (JFACC) process by optimizing target/weapon solutions. NSS also injects simulated platform, system and commander level entities into real world C4ISR systems. NSS simulated each Warfare Area Commander's perceived tactical picture and performs Measures of Effectiveness against ground truth. Currently there are over 40 government and private industry sites using NSS. NSS has been made part of many HLA Federations and is also DII COE Level 7 Compliant. (CONTINUED ON NEXT PAGE)</p>								



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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604231N - TACTICAL COMMAND SYSTEM

(CONTINUED FROM PREVIOUS PAGE)

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. FORCEnet initiatives include the necessary Transformation Master Planning required across all management execution horizons (Near/Mid/Long-Term) to evolve towards a fully-netted human-centrally optimized combat force structure. FORCEnet efforts will serve as the transformational change agent for the integration of all Navy and Marine Corps mission capabilities, system and human-centric architectures coupled with enabling technologies grounded in a business-based program order-of-buy approach combined with the technical program management/execution responsibilities leading Navy and Marine Corps transformational capabilities towards a fully netted combat force. FORCEnet is the architecture and building blocks of sensors, networks, decision aids, weapons, warriors and supporting systems integrated into a highly adaptive, human-centric, comprehensive system that operates from seabed to space, from sea to land. The goal of the NavMPS Program Team is to develop scaleable, extensible, and configurable planning systems to meet a full range of automated mission planning needs. NavMPS products (includes the Joint Mission Planning System (JMPS)) provides the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions and post-mission analysis of recorded data. JMPS is a co-development effort between the USN, USAF, USA, and SOCOM under the Multi-Service Joint Enterprise Management Team (JEMT). Requirements are identified and capabilities are developed in an evolutionary concept in order to address world situation requirements for mission planning and precision guided missile deployment.

R-1 SHOPPING LIST - Item No. 96

**UNCLASSIFIED**

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 2 of 90)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System			PROJECT NUMBER AND NAME E2213 Mission Planning				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>23.593</b>	<b>24.099</b>	<b>25.300</b>	<b>18.759</b>	<b>14.782</b>	<b>8.736</b>	<b>8.894</b>	<b>9.042</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The Joint Mission Planning System (JMPS) is a co-development program with the Navy, Air Force, United States Special Operations Command (USSOCOM), and Army to develop a scaleable, extensible, and configurable open architecture to meet a full range of Joint automated 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. As a key net-centric warfare enabler, JMPS will provide seamless interoperability, improved data availability and flexibility. 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 set a 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, 3-D visualization, Common Mission Data Load (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, Precision Targeting Workstation (PTW) Imagery Interface, Global Command and Control System-Maritime (GCCS-M) interface, GPS Crypto Keys, Program Guided Munitions (PGM) planning, weather interface, Global Positions Systems (GPS), Prediction, Server Implementation. The JMPS Combat One will also serve as a common foundation to support mission planning for all legacy platforms. JMPS will evolve architecturally as necessary to support future platforms and weapons such as the Joint Strike Fighter (JSF) and Joint Air to Surface Standoff Missile (JASSM). 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, Theater Ballistics Missile Command System (TBMCS) interface, route deconfliction, stores planning and weapon effectiveness, and Littoral Mission Planning Tools.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME E2213 Mission Planning

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	23.593	17.931	13.628	0.000
RDT&E Articles Quantity				

JMPS Version 1 and Combat 1 Development Effort- JMPS Version 1 and Combat 1 support during D/T & O/T. Nomination and assessment of JMPS Combat 1 contract incentive fees. Continue JMPS Combat 1 fix builds for any discrepancies identified during systems testing. Continue systems testing, start Unique Planning Component (UPC) testing, System of Systems testing, and Unique Planning Component (UPC) validations. Contract incentive fee. D/T Support--JMPS Combat 1 Pre-O/T Readiness Review and begin JMPS Combat 1 O/T late in FY03. Engineering Logistics & Management support. Provide collaboration support across platforms and weapons programs w/ Navy, Air Force, Army, and Marines.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	5.229	10.757	17.859
RDT&E Articles Quantity				

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 deconfliction, stores planning and weapon effectiveness. Operational Test support for 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 deconfliction, stores planning and weapon effectiveness. JMPS Follow-On support during Operational testing. Nomination and assessment of JMPS Follow-On 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. Develop Betas & Version Releases for Framework components & enhanced operability. Transition S&T (Science and Technology) initiatives into JMPS Follow-On.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.939	0.915	0.900
RDT&E Articles Quantity				

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. PFPS Component Migration to JMPS Follow-On.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical command System	PROJECT NUMBER AND NAME E2213 Mission Planning			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		20.759	24.644	17.244	11.003
Current BES/President's Budget		23.593	24.099	25.300	18.759
Total Adjustments		2.834	-0.545	8.056	7.756
Summary of Adjustments					
Congressional program reductions			-0.146		
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions		-0.066	-0.399	-0.583	-0.404
Reprogrammings		2.900			
Other Navy/OSD Adjustments				8.639	8.160
Congressional increases					
Subtotal		2.834	-0.545	8.056	7.756
Schedule:					
The FY02 JMPS JC-1 contract schedule changed from 2Q/02 to 3Q/02 due to waiting for receipt of \$2.8M BTR.					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>FEBRUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System				PROJECT NUMBER AND NAME E2213 Mission Planning			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning Syster	12.996	6.458	8.639	9.797	8.113	11.934	12.152	12.370	Continuing	Continuing
Related RDT&E:										
PE 0604215N Standards Development										
PE 0208006F Air Force Mission Support Syst	17.300	16.540	62.348	144.059	144.544	247.154	98.609	96.164	Continuing	Continuing
<b>(U) E. ACQUISITION STRATEGY:</b>										
<p>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 work 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.</p>										

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System			E2213 Mission Planning						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Dev JV-1	SS/CPIF	NGIT, VA	29.655	4.217	11/02		11/03				33.872	33.872
Primary Software Dev JC-1	SS/CPIF	NGIT, VA	11.400	6.700	11/02	2.733	11/03			0.600	21.433	21.433
Primary Software Dev N-PFPS	MP	Eglin AFB, Florida	6.315	0.300	11/02	0.500	11/03	0.500	11/04		7.615	
Primary Software N-PFPS	MP	Hill AFB, Utah	1.212	0.209	11/02	0.275	11/03	0.300	11/04		1.996	
Primary Software Dev Follow-on	TBD	TBD		4.173	11/02	10.211	11/03	9.700	11/04		24.084	
Systems Engineering	MP	FEDISM (GSA)	0.200	0.300	11/02	0.200	11/03			Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees			4.395			2.310	11/03				6.705	6.705
Subtotal Product Development			53.177	15.899		16.229		10.500		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support	WX	SPAWAR, Phil. PA	1.116	1.575	11/02	1.773	11/03	1.906	11/04	Continuing	Continuing	
Integrated Logistics Support	WX	NAWCAD, Pax River, MD	0.679	1.900	11/02	1.200	11/03	1.500	11/04	Continuing	Continuing	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			1.795	3.475		2.973		3.406		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System			E2213 Mission Planning						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WX	OPTEVFOR, VA	0.272	0.700	11/02	0.386	11/03			Continuing	Continuing	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.272	0.700		0.386		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WX	NAWCAD, Pax River, MD	1.016	0.975	11/02	1.822	11/03	1.085	11/04	Continuing	Continuing	
Program Management Support	RX	Various	1.370	0.300	11/02	0.770	11/03	0.556	11/04	Continuing	Continuing	
Travel	WX	NAWCAD, Pax River, MD	0.480	0.150	11/02	0.190	11/03	0.200	11/04		1.020	
Transportation											0.000	
Government Engineering Support		NAWCWD, Pt Mugu, CA	3.375	2.600	11/02	2.930	11/03	3.012	11/04		11.917	
Subtotal Management			6.241	4.025		5.712		4.853		Continuing	Continuing	
Remarks:												
Total Cost			61.485	24.099		25.300		18.759		Continuing	Continuing	
Remarks:												







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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	63.702	1.540	1.437	1.317	1.229	1.264	1.497	1.523	1.552	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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) and High Altitude Endurance Unmanned Aerial Vehicle (HAE UAV).

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, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.175	0.000	0.000	0.000
RDT&E Articles Quantity				

Completed 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 portal and web enablement.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.220	0.331	0.228	0.201
RDT&E Articles Quantity				

Develop interface documentation based on 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 Digital Modular Radio (DMR) interface requirements between other TSC/MOCC elements. Design and test 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, antenna technology and the USN/DoD satellite replacement programs. Ensure interoperability in a land, sea, air and mobile environment. Conduct testing of air platform support systems and data exchange devices for incorporation into baseline systems for deployment.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.389	0.454	0.465	0.460
RDT&E Articles Quantity				

Improve the acoustic Fast Time Analysis System (FTAS) to increase reliability of the obsolete proprietary hardware, by incorporating Commercial Off The Shelf (COTS) technology, and by incorporating new functionality in support of emerging aircraft acoustic replay capabilities. Develop a detailed set of requirements for follow-on system.

R-1 SHOPPING LIST - Item No. 96

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.581	0.374	0.430	0.412
RDT&E Articles Quantity				

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 specifications and concept documents for impact on TSC and MOCC systems. Develop ATOS interfaces for emerging aircraft data transport devices. Perform testing on new software and hardware components. Continue development of aircraft status to a web-enabled segment and combined with Aircraft Brief to form a single segment.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.175	0.278	0.194	0.156
RDT&E Articles Quantity				

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. 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. Develop and document ground support systems and associated interfaces to support various data exchange devices for air platforms. 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.

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		1.627	1.470		
Current BES/President's Budget		1.540	1.437	1.317	1.229
Total Adjustments		-0.087	-0.033	0.000	0.000
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.014			
FY2002 SBIR		-0.002			
Sec. 313, PL 107-206: Revised Econ Assump.		-0.003			
Sec 8135 Economic Assumptions		-0.004	-0.008		
Misc Department Adjustments		-0.064	-0.016		
Sec 8100 Business Process Reform			-0.006		
Sec 8109 IT Cost Growth			-0.003		
Subtotal		-0.087	-0.033		
(U) Schedule:					
N/A.					
(U) Technical:					
N/A.					

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
GCCS-M TACMOBILE (OPN - BLI 2246)	5.892	5.002	6.516	5.446	5.633	5.643	5.747	5.853	CONT.	CONT.
GCCS-M TACMOBILE (OPN - BLI 2608)	10.326	12.698	10.530	11.020	12.446	6.034	6.070	13.196	CONT.	CONT.
 <b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										

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Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X0486 GCCS-M TACMOBILE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	18.729	0.221	VARIOUS	0.380	VARIOUS	0.340	VARIOUS	0.000	19.670	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			18.729	0.221		0.380		0.340		0.000	19.670	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	33.255	0.844	VARIOUS	0.650	VARIOUS	0.629	VARIOUS	0.000	35.378	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			33.255	0.844		0.650		0.629		0.000	35.378	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-??</b>			0604231N - TACTICAL COMMAND SYSTEM			X0486 GCCS-M TACMOBILE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WR	OPTEVFOR	3.084	0.070	VARIOUS	0.071	VARIOUS	0.060	VARIOUS	0.000	3.285	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			3.084	0.070		0.071		0.060		0.000	3.285	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	10.213	0.302	VARIOUS	0.216	VARIOUS	0.200	VARIOUS	0.000	10.931	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			10.213	0.302		0.216		0.200		0.000	10.931	
Remarks:												
Total Cost			65.281	1.437		1.317		1.229		0.000	69.264	
Remarks:												



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EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM								PROJECT NUMBER AND NAME X0486 GCCS-M TACMOBILE																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>												4.X MILESTONE "C" ▲								5.X MILESTONE "C" ▲												6.X MILESTONE "C" ▲				
Prototype Phase																																				
Development																																				
Delivery																																				
Software 4.X SW Delivery											VER 4.X DELIVERY ▲								VER 5.X DELIVERY ▲								VER 6.X DELIVERY ▲									
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test											VER 4.X OT ▲								VER 5.X DT/OT ▲								VER 6.X DT/OT ▲									
<b>Production Milestones</b>																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 96

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

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	54.418	6.801	5.825	7.468	6.099	7.942	8.571	8.732	8.895	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.595	0.000	0.000	0.000
RDT&E Articles Quantity				

Architecture: Developed and implemented modernized architectures, including web-centric and N-Tier. Continued to develop Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corps elements. Tested and integrated GCCS-M GOTS products into PC COTS installation and runtime environment. Performed testing and integration with latest commercial products to ensure complete interoperability and data level integration. Performed engineering to provide fleet recommendations on compatible hardware and software configurations/modifications to current baselines.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.669	3.422	3.534	3.088
RDT&E Articles Quantity				

Employment Scheduling / WSM / Readiness: 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. 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.

In FY04, 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.

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.587	0.420	0.688	0.526
RDT&E Articles Quantity				

Spectral and Environmental Analysis: Develop capability for automatic interface and update with SPEDS/ICAP Integrated Product (SIIP) and Meteorological and Oceanography (METOC). Continue 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.100	1.284	2.102	1.609
RDT&E Articles Quantity				

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.

In FY04, provide web-enabling of mission support applications and migration of functionality to maintain COE currency.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.850	0.699	1.144	0.876
RDT&E Articles Quantity				

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.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 22 of 90)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS		
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>				
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	7.758	5.956		
Current BES/President's Budget	6.801	5.825	7.468	6.099
Total Adjustments	-0.957	-0.131	0.000	0.000
Summary of Adjustments				
Realignment for EKMS Tier 1	-0.500			
Section 8123: Management Reform Initiative	-0.064			
FY2002 SBIR (dtd 5-15-02)	-0.059			
Misc Department Adjustments	-0.146	-0.063		
BTR for Joint Mission Planning Sys (JMPS) Combat One	-0.153			
Sec. 313, PL 107-206: Revised Economic Assumption	-0.016			
Sec 8100 Business Process Reform		-0.024		
Sec 8135 Economic Assumptions	-0.019	-0.033		
Sec 8109 IT Cost Growth		-0.011		
Subtotal	-0.957	-0.131		
(U) Schedule: N/A.				
(U) Technical: N/A.				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
GCCS-M (OPN - BLI 2608)	59.304	52.996	52.398	63.418	107.101	63.753	85.923	106.005	Continuing	Continuing
 <b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X0709 GCCS-M MARITIME APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	11.623	0.466	VARIOUS	0.673	VARIOUS	0.500	VARIOUS	0.000	13.262	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			11.623	0.466		0.673		0.500		0.000	13.262	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	40.301	4.868	VARIOUS	6.086	VARIOUS	5.072	VARIOUS	0.000	56.327	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			40.301	4.868		6.086		5.072		0.000	56.327	
Remarks:												



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X0709 GCCS-M MARITIME APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	WR	OPTEVFOR	1.090	0.000		0.000		0.000		0.000	1.090	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			1.090	0.000		0.000		0.000		0.000	1.090	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	8.386	0.491	VARIOUS	0.709	VARIOUS	0.527	VARIOUS	0.000	10.113	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			8.386	0.491		0.709		0.527		0.000	10.113	
Remarks:												
Total Cost			61.400	5.825		7.468		6.099		0.000	80.792	
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>											
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM										PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>												4.X MILESTONE "C" ▲								5.X MILESTONE "C" ▲												6.X MILESTONE "C" ▲				
Prototype Phase																																				
Development																																				
Delivery																																				
Software 4.X SW Delivery											VER 4.X DELIVERY ▲								VER 5.X DELIVERY ▲								VER 6.X DELIVERY ▲									
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test											VER 4.X OT ▲								VER 5.X DT/OT ▲								VER 6.X DT/OT ▲									
<b>Production Milestones</b>																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 27 of 90)

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>		PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X0709 GCCS-M MARITIME APPLICATIONS			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Software Delivery 4.X			Q2						
Operational Test 4.X			Q3						
Milestone C 4.X			Q4						
Software Delivery 5.X					Q2				
Operational Test 5.X					Q3				
Milestone C 5.X					Q4				
Software Delivery 6.X							Q2		
Operational Test 6.X							Q3		
Milestone C 6.X							Q4		

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	53.191	3.815	2.906	2.146	1.492	2.147	1.836	1.659	1.482	Continuing	Continuing
RDT&E Articles Qty											0

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

(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 crypto logic 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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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.495	1.441	0.786	0.806
RDT&E Articles Quantity				

Continue to implement, accredit and deploy MLS changes needed to support MLS email and Network Guard technology. Continue to develop entrusted client architecture using single level clients to evolve a Multi-Level Security design. Continue to develop entrusted client architecture using single level clients to evolve a Multi-Security Level design in conjunction with network guard, MLS email, and guard/sanitizer development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.366	0.240	0.092	0.091
RDT&E Articles Quantity				

Continue to update message encoders, decoders and correlation algorithms as required to meet formatted message standards and changes in sensor data feeds.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.134	0.651	0.303	0.288
RDT&E Articles Quantity				

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. Continue to develop and implement improved tactical decision aids, and system alerting capabilities.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.489	0.334	0.202	0.199
RDT&E Articles Quantity				

Continue to port MLS Capability to DII COE based standards.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.331	0.240	0.111	0.108
RDT&E Articles Quantity				

Continue to develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.654	0.000
RDT&E Articles Quantity				

Develop multi-level secure encryption path within shore-to-ship network for direct connectivity to allied networks. Enable Counter Terrorism (CT) data in afloat message handling systems and COP database. Enhance CT data mining and alerting tools at JICs.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		3.939	2.973		
Current BES/President's Budget		3.815	2.906	2.146	1.492
Total Adjustments		-0.124	-0.067	0.000	0.000
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.035			
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.008			
Sec 8135 Economic Assumptions		-0.011	-0.017		
Miscellaneous Department Adjustments		-0.070	-0.031		
Sec 8100 Business Process Reform			-0.012		
Sec 8109 IT Cost Growth			-0.005		
Sec 8029, PL 107-248 FY03 FFRDC reduction			-0.002		
Subtotal		-0.124	-0.067		
(U) Schedule:					
N/A.					
(U) Technical:					
N/A.					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
GCCS-M TIS (OPN - BLI 2608)	1.953	1.504	2.663	2.528	3.483	2.269	2.315	4.362	Continuing	Continuing
 <b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X2009 TRUSTED INFORMATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	9.077	0.253	VARIOUS	0.212	VARIOUS	0.152	VARIOUS	0.000	9.694	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			9.077	0.253		0.212		0.152		0.000	9.694	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	45.304	2.598	VARIOUS	1.888	VARIOUS	1.308	VARIOUS	0.000	51.098	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			45.304	2.598		1.888		1.308		0.000	51.098	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X2009 TRUSTED INFORMATION SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PD	OPTEVFOR	0.630	0.000		0.000		0.000		0.000	0.630	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.630	0.000		0.000		0.000		0.000	0.630	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.084	0.055	VARIOUS	0.046	VARIOUS	0.032	VARIOUS	0.000	2.217	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.084	0.055		0.046		0.032		0.000	2.217	
Remarks:												
Total Cost			57.095	2.906		2.146		1.492		0.000	63.639	
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																										DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM										PROJECT NUMBER AND NAME X2009 TRUSTED INFORMATION SYSTEMS													
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>													▲ MILESTONE "C" - VERSION "5"																				
Prototype Phase																																	
Development																																	
Delivery																																	
Software 5.X SW Delivery									▲																								
<b>Test &amp; Evaluation Milestones</b>																																	
Development Test																																	
Operational Test									▲																								
<b>Production Milestones</b>																																	
Deliveries																																	



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	37.798	6.400	3.033	2.601	2.986	3.306	3.991	4.066	4.142	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.250	0.000	0.000	0.000
RDT&E Articles Quantity				

Tactical Combat and Weapons Systems Support: Provided increased functionality and expanded the performance envelope in the Intelligence and Imagery applications to support real-time combat systems interfaces and multiple weapons systems planning and execution.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.609	0.000	0.000	0.000
RDT&E Articles Quantity				

JPN / TADIL / BROADCASTS: Enhanced 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. Enhanced Intelligence and Imagery subscription methodologies to support disadvantaged users. Incorporated COTS Internet tools to enable users to use IT-21 infrastructure to obtain a subset of finished intelligence data and services via the web. Provided the capability to distribute intelligence data cross-referenced to imagery that enabled users to view and edit OOB data, characteristics and performance data, and imagery over the WAN. Distributed those changes through the COP to joint intelligence centers. Integrated 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

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.001	0.000	0.000	0.000
RDT&E Articles Quantity				

Testing and Documentation/Curriculum Development: Performed systems testing on the integrated components of the GCCS-M Intel architecture. Developed a capability for generating GENSER and SCI national and tactical data for GCCS-M testing, training and exercise support. Developed a documentation infrastructure that enabled required segment documentation to be utilized throughout GCCS-M (segment and system-level) in user's manuals, delivery documentation, and curriculum development.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.091	1.005	0.846	0.971
RDT&E Articles Quantity				

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 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.382	1.650	1.399	1.631
RDT&E Articles Quantity				

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 enhanced 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. Significant reduction in funding effects this effort from FY03 out.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.315	0.189	0.178	0.192
RDT&E Articles Quantity				

Spectral and Environmental Analysis: Develop and enhance Intel data sources for C2WC, nodal analysis, and other GCCS-M applications.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.752	0.189	0.178	0.192
RDT&E Articles Quantity				

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. Significant reduction in funding effects this effort from FY03 out.

R-1 SHOPPING LIST - Item No. 96

**UNCLASSIFIED**

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 41 of 90)



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	6.596	3.610		
Current BES/President's Budget	6.400	3.033	2.601	2.986
Total Adjustments	-0.196	-0.577	0.000	0.000

Summary of Adjustments

Section 8123: Management Reform Initiative	-0.058			
Miscellaneous Department Adjustments	-0.106	-0.533		
Sec 8029, P.L 107-248 FY03 FFRDC reduction		-0.006		
Sec. 313, PL 107-206: Revised Economic Assumptions	-0.014			
Sec 8100 Business Process Reform		-0.012		
Sec 8135 Economic Assumptions	-0.018	-0.020		
Sec 8109 IT Cost Growth		-0.006		

Subtotal	-0.196	-0.577	0.000	0.000
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(U) Schedule:

N/A.

(U) Technical:

N/A.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
GCCS-M (OPN - BLI 2608)	59.304	52.996	52.398	63.418	107.101	63.753	85.923	106.005	Continuing	Continuing
 <b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X0521 GCCS-M INTELLIGENCE APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	18.268	0.378	VARIOUS	0.365	VARIOUS	0.381	VARIOUS	0.000	19.392	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			18.268	0.378		0.365		0.381		0.000	19.392	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	21.939	2.614	VARIOUS	2.196	VARIOUS	2.564	VARIOUS	0.000	29.313	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			21.939	2.614		2.196		2.564		0.000	29.313	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X0521 GCCS-M INTELLIGENCE APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation	PD	OPTEVFOR	2.056	0.000		0.000		0.000		0.000	2.056	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			2.056	0.000		0.000		0.000		0.000	2.056	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.073	0.041	VARIOUS	0.040	VARIOUS	0.041	VARIOUS	0.000	2.195	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.073	0.041		0.040		0.041		0.000	2.195	
Remarks:												
Total Cost			44.336	3.033		2.601		2.986		0.000	52.956	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM								PROJECT NUMBER AND NAME X0521 GCCS-M INTELLIGENCE APPLICATIONS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>												4.X MILESTONE "C" ▲								5.X MILESTONE "C" ▲												6.X MILESTONE "C" ▲				
Prototype Phase																																				
Development																																				
Delivery																																				
Software 4.X SW Delivery												VER 4.X DELIVERY ▲								VER 5.X DELIVERY ▲												VER 6.X DELIVERY ▲				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test												VER 4.X OT ▲								VER 5.X DT/OT ▲												VER 6.X DT/OT ▲				
<b>Production Milestones</b>																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 96

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

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	36.718	10.429	12.486	10.964	9.197	12.879	11.759	11.980	12.206	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.704	0.876	0.768	0.759
RDT&E Articles Quantity				

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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.000	2.112	1.504	0.489
RDT&E Articles Quantity				

Web-Enabling/IT-21/Readiness/ 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. 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. Provide readiness capabilities, which will integrate with Joint and coalition forces, including web-based integration with GCCS-Joint, JOPES, and similar theater-level C4I systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.939	2.716	2.001	1.921
RDT&E Articles Quantity				

Testing/Usability (COMEXT/MAREXT): 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. 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.

R-1 SHOPPING LIST - Item No. 96

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**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 49 of 90)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.538	0.691	0.763	0.599
RDT&E Articles Quantity				

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. 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.500	4.728	4.272	4.095
RDT&E Articles Quantity				

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. Integrated and supported interfaces to the Joint Tactical Terminal Control Client. Utilize data compression and improve 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 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.748	1.363	1.506	1.181
RDT&E Articles Quantity				

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. In FY03, COMEXT/MAREXT participation increases: 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.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.150	0.153
RDT&E Articles Quantity				

Research, develop and integrate tactical decision aides, analytical tools, and decision support tools to satisfy emergent operational C4I requirements for Force Protection and Homeland Defense missions. Conduct rapid prototyping and end-to-end testing of these solutions to provide "speed of capability" to the warfighter. Ensure current and emergent functionality and capabilities provide improved interoperability with Allied and Coalition partners.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	11.314	12.808		
Current BES/President's Budget	10.429	12.486	10.964	9.197
Total Adjustments	-0.885	-0.322	0.000	0.000

Summary of Adjustments

Web Enabling Offset	-0.300			
Realignment for EKMS Tier 1	-0.500			
Section 8123: Management Reform Initiative	-0.093			
Miscellaneous Department Adjustment	0.451	-0.135		
FY2002 SBIR	-0.177			
BTR for Joint Mission Planning Sys (JMPS) Combat One	-0.215			
Sec. 313, PL 107-206: Revised Economic Assumptions	-0.023			
Sec 8100 Business Process Reform (SEC. 8100)		-0.051		
Sec 8135 Economic Assumptions	-0.028	-0.091		
Sec 8109 IT Cost Growth		-0.023		
Sec 8029 P.L. 107-248 FY03 FFRDC reduction		-0.022		

Subtotal	-0.885	-0.322		
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(U) Schedule:  
N/A.

(U) Technical:  
N/A.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
GCCS-M (OPN - BLI 2608)	59.304	52.996	52.398	63.418	107.101	63.753	85.923	106.005	Continuing	Continuing
 <b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X2305 GCCS-M COMMON APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	VARIOUS	VARIOUS	5.678	1.175	VARIOUS	1.157	VARIOUS	0.883	VARIOUS	0.000	8.893	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			5.678	1.175		1.157		0.883		0.000	8.893	
Remarks:												
Development Support											0.000	
Software Development	VARIOUS	VARIOUS	34.239	9.431	VARIOUS	7.954	VARIOUS	6.900	VARIOUS	0.000	58.524	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			34.239	9.431		7.954		6.900		0.000	58.524	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - TACTICAL COMMAND SYSTEM			X2305 GCCS-M COMMON APPLICATIONS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	4.535	0.956	VARIOUS	0.941	VARIOUS	0.719	VARIOUS	0.000	7.151	
Operational Test & Evaluation	VARIOUS	VARIOUS	0.643	0.219	VARIOUS	0.217	VARIOUS	0.165	VARIOUS	0.000	1.244	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			5.178	1.175		1.158		0.884		0.000	8.395	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.052	0.705	VARIOUS	0.695	VARIOUS	0.530	VARIOUS	0.000	3.982	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			2.052	0.705		0.695		0.530		0.000	3.982	
Remarks:												
Total Cost			47.147	12.486		10.964		9.197		0.000	79.794	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>											
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604231N - TACTICAL COMMAND SYSTEM										PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>												4.X MILESTONE "C" ▲								5.X MILESTONE "C" ▲												6.X MILESTONE "C" ▲				
Prototype Phase																																				
Development																																				
Delivery																																				
Software 4.X SW Delivery												VER 4.X DELIVERY ▲								VER 5.X DELIVERY ▲												VER 6.X DELIVERY ▲				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test												VER 4.X OT ▲								VER 5.X DT/OT ▲												VER 6.X DT/OT ▲				
<b>Production Milestones</b>																																				
Deliveries																																				

R-1 SHOPPING LIST - Item No. 96

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**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 56 of 90)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604231N - TACTICAL COMMAND SYSTEM				PROJECT NUMBER AND NAME X2305 GCCS-M COMMON APPLICATIONS				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Software Delivery 4.X			Q2						
Operational Test 4.X			Q3						
Milestone C 4.X			Q4						
Software Delivery 5.X					Q2				
Operational Test 5.X					Q3				
Milestone C 5.X					Q4				
Software Delivery 6.X							Q2		
Operational Test 6.X							Q3		
Milestone C 6.X							Q4		



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems				PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	11.251	3.243	0.000	0.000	0.000	0.000	0.000	0.000	0.000		14.494
RDT&E Articles Qty											0

**(U) A. 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 trace ability 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 Battle group 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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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.356	0.000	0.000	0.000
RDT&E Articles Quantity				

Interfaced NSS with the JMV (Map Server) and NRL Ambassador for pulling COP (Common Operational Picture). Performed assessment to determine which Tactical Decision Aids (TDAs) are supportive of meeting NSS ORD requirements. Conducted partial independent testing on all newly developed software.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.119	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued development of C4ISR functionality in support of Antisubmarine Warfare (ASW), Surface Warfare (SuW), Air Warfare (AW), including physical environmental modeling, upgrade of Measure of Effectiveness (MOE), Graphical User Interface (GUI) enhancements and industry versions of NSS. Continued development of SuW functionality module and planning tool. Initiate development of Amphibious Warfare (AMW) functionality module and planning tool. Continue Mine Warfare (MIW) and Mine Counter Mine (MCM), Warfare Mission Area (WMA) and Design Agent (DA).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.074	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued development of Logistics (LOG) functionality module. Continued development of Strike Warfare Mission Area (WMA) and Decision Aid (DA).

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.038	0.000	0.000	0.000
RDT&E Articles Quantity				

Supported VV&A Subject Matter Expert (SME) activities. Included review of all conceptual models and code development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued implementation of run-time improvement technology as specified by DDB (Design Decision Briefs).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.150	0.000	0.000	0.000
RDT&E Articles Quantity				

Implemented Operational Databases including current tactical picture and targeting databases. Continued Integration of Operational Databases including COP, and JMTC terrain data.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.075	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued support to Naval Post Graduate School (NPGS) Fires Analysis project and Fleet Battle Experiments (FBEs) 02 planning, wargaming, and experimentation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.085	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued support to testing facilities at NPGS and Independent Testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.030	0.000	0.000	0.000
RDT&E Articles Quantity				

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.

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.055	0.000	0.000	0.000
RDT&E Articles Quantity				

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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.064	0.000	0.000	0.000
RDT&E Articles Quantity				

Implemented, tested, and documented improvements to the NSS GUI CAT COA Tool. Provided for Training and Maintenance.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.115	0.000	0.000	0.000
RDT&E Articles Quantity				

Supported Integrated Product Teams (IPTs) addressing Task Force Web (TFW) implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Continued assessment of Earned Value management system.

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.300	0.000	0.000	0.000
RDT&E Articles Quantity				

Supported NSS Configuration Control Board. Developed DDB for NSS build v3.3. Conducted factory testing of NSS build v3.3 for deployment certification. Conducted independent testing of all newly developed software code.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.207	0.000	0.000	0.000
RDT&E Articles Quantity				

Implemented Lockheed Martin Software Change Requests (SCRs) and provided monthly patches to CPF.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.575	0.000	0.000	0.000
RDT&E Articles Quantity				

Joint Methodology to Assess C4ISR Architecture (JMACA) program.

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems	PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		5.208	0.000		
Current BES/President's Budget		3.243	0.000	0.000	0.000
Total Adjustments		-1.965	0.000	0.000	0.000
Summary of Adjustments					
Miscellaneous Department Adjustments		-0.275			
Section 8123: Management Reform Initiative		-0.044			
FY2002 SBIR (dtd 5-15-02)		-0.097			
Joint Mission Planning Systems (JMPS) Combat One (JC1)		-0.098			
Joint Methodology to Assess C4ISR Architecture (JMACA)		0.575			
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.011			
Sec 8135 Economic Assumptions		-0.015			
Modeling and Simulation realignment		-2.000			
Subtotal		-1.965	0.000	0.000	0.000
(U) Schedule:					
N/A					
(U) Technical:					
N/A					

R-1 SHOPPING LIST - Item No. 96

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N - Tactical Command Systems			PROJECT NUMBER AND NAME X2306 / Naval Simulation Systems					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
N/A										
<b>(U) E. ACQUISITION STRATEGY:</b>										
N/A										



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - Tactical Command Systems			X2306 / Naval Simulation Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	SSC SD	0.434								0.434	
Training Development											0.000	
Licenses	WR	SSC SD	0.220								0.220	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.654	0.000		0.000		0.000		0.000	0.654	
Remarks:												
Development Support											0.000	
Software Development	C-ID/IQ	Metron Inc - CA	9.927								9.927	
Integrated Logistics Support											0.000	
Configuration Management	C-ID/IQ	Metron Inc - CA	1.115								1.115	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			11.042	0.000		0.000		0.000		0.000	11.042	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N - Tactical Command Systems			X2306 / Naval Simulation Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C-ID/IQ	Metron - CA / Rolands - CA	1.052								1.052	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			1.052	0.000		0.000		0.000		0.000	1.052	
Remarks: Metron Inc received \$1.000K / Rolands received \$0.382K												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	SSC SD	1.474								1.474	
Program Management Support	Various	Various	0.212								0.212	
Travel		HQ	0.060								0.060	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.746	0.000		0.000		0.000		0.000	1.746	
Remarks:												
Total Cost			14.494	0.000		0.000		0.000		0.000	14.494	
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System				PROJECT NUMBER AND NAME X2307 Integrated Shipboard Network System (ISNS)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	9.411	3.457	1.567	1.041	1.697	1.246	1.373	1.398	1.424	Continuing	Continuing
RDT&E Articles Qty											

**(U) A. 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), 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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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME X2307 Integrated Shipboard Network System (ISNS)

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.457	1.567	1.041	1.697
RDT&E Articles Quantity				

(FY02) Investigated, developed and tested server and workstation technology upgrades to incorporate into existing architecture. Investigated, developed and tested Enterprise-Wide Network Management and Administration to merge with existing Integrated Network Management development solutions. Researched and developed more complex e-mail security and general security systems as they relate to the Shipboard LAN infrastructure. Investigated, developed and tested NT software scripting.

(FY03) Investigate, develop and test switch technology upgrades to the Shipboard LAN architecture. 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. Perform developmental testing in support of MS C for Block 1 architecture.

(FY04-FY05) Continue to investigate, develop and test next generation LAN Protocols (including Wireless LAN, Network management and administration, Secure/Nonsecure Voice, Internet Protocol Video and Quality of Service protocols) for potential incorporation into the Shipboard LAN architecture. Investigate, integrate and test data prioritization, advanced data storage and management, next generation server/workstation operation systems and fixes for security vulnerabilities. Perform studies to increase availability and survivability of networks and reduce network infrastructure footprint. Continual investigation of protocols, hardware, and software for insertion into the LAN architecture is driven by eighteen month technology change cycle and maintaining a secure network against evolving threats. Perform follow-on system developmental and operational testing. Perform developmental testing and operational testing of Block 1 and Block 2 architecture. The testing events will support MS C for Block 2 Architecture.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604231N Tactical Command System	X2307 Integrated Shipboard Network System (ISNS)

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	3.958	1.602		
Current BES/President's Budget	3.457	1.567	1.041	1.697
Total Adjustments	-0.501	-0.035	0.000	0.000

Summary of Adjustments

Section 8123: Management Reform Initiative	-0.035			
FY2002 SBIR/STTR Transfer	-0.039			
Sec 313, PL 107-206 Rev. Econ. Assumption	-0.008			
Sec 8100 Business Process Reform	0.000	-0.006		
Sec 8135 Economic Assumptions	-0.011	-0.009		
Sec 8109 IT Cost Growth	0.000	-0.003		
Miscellaneous Department Adjustments	-0.408	-0.017		

Subtotal	-0.501	-0.035	0.000	0.000
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(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>																								
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604231N Tactical Command System			<b>PROJECT NUMBER AND NAME</b> X2307 Integrated Shipboard Network System (ISNS)																										
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. &amp; Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">BLI: 3050 COMM AUTO</td> <td style="text-align: center; padding: 5px;">130.517</td> <td style="text-align: center; padding: 5px;">162.180</td> <td style="text-align: center; padding: 5px;">175.087</td> <td style="text-align: center; padding: 5px;">140.517</td> <td style="text-align: center; padding: 5px;">271.940</td> <td style="text-align: center; padding: 5px;">90.342</td> <td style="text-align: center; padding: 5px;">121.506</td> <td style="text-align: center; padding: 5px;">165.090</td> <td style="text-align: center; padding: 5px;">Cont.</td> <td style="text-align: center; padding: 5px;">Cont.</td> </tr> </tbody> </table> <p style="margin-top: 20px;"><b>(U) E. ACQUISITION STRATEGY:</b></p> <p style="margin-left: 20px;">Acquisition, Management and Contracting Strategy are to support: Investigated, developed and tested server and workstation technology upgrades to incorporate into existing architecture.</p> <p style="margin-left: 20px;">Note: ACAT 1AC designation requested by DASN (14 Aug 02).</p>											Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI: 3050 COMM AUTO	130.517	162.180	175.087	140.517	271.940	90.342	121.506	165.090	Cont.	Cont.
Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																						
BLI: 3050 COMM AUTO	130.517	162.180	175.087	140.517	271.940	90.342	121.506	165.090	Cont.	Cont.																						

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Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System			X2307 Integrated Shipboard Network System (ISNS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	MIPR	FEDSIM/SAIC	1.211	0.253	12/02	0.1874	12/03	0.305	12/04	Continuing	Continuing	
Primary Hardware Development	WX	SSC CH	1.709	0.252	12/02	0.1874	12/03	0.305	12/04	Continuing	Continuing	
Primary Hardware Development	WX	SSC SD	1.094	0.310	12/02	0.2603	12/03	0.458	12/04	Continuing	Continuing	
Primary Hardware Development	TMM	EDS	0.196									0.196
Systems Engineering	MIPR	MITRE	0.426									0.426
Systems Engineering	MIPR	FEDSIM/SAIC	1.213	0.222	12/02	0.0625	12/03	0.085	12/04	Continuing	Continuing	
Systems Engineering	Various	Various	0.810									0.810
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			6.659	1.037		0.6975		1.153		0.000		9.546
Remarks:												
Development Support												0.000
Software Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
Studies & Analyses												0.000
GFE												0.000
Award Fees												0.000
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: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System				X2307 Integrated Shipboard Network System (ISNS)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WX	SSC CHS	0.570	0.100	12/02	0.073	12/03	0.119	12/04	Continuing	Continuing	
Test & Evaluation	WX	SSC SD	1.047	0.200	12/02	0.146	12/03	0.255	12/04	Continuing	Continuing	
Test & Evaluation	WX	SSC Chespk	0.555	0.150	12/02	0.063	12/03	0.102	12/04	Continuing	Continuing	
Operational Test & Evaluation	WR	OPTEVFOR	0.206	0.080	12/02	0.062	12/03	0.068	12/04	Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			2.378	0.530		0.344		0.544		0.000	3.796	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	WX	SSC CHS	0.257								0.257	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.257	0.000		0.000		0.000		0.000	0.257	
Remarks:												
Total Cost			9.294	1.567		1.041		1.697		0.000	13.599	
Remarks:												







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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System				PROJECT NUMBER AND NAME X3032 NTCSS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>0.000</b>	<b>4.790</b>	<b>4.906</b>	<b>3.314</b>	<b>3.332</b>	<b>2.440</b>	<b>3.441</b>	<b>3.506</b>	<b>3.571</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>  X3032. Navy Tactical Command Support Systems (NTCSS) - This RDT&amp;E Project funding supports design, development and testing of the components of the NTCSS web initiative: (1) Web-enabling the NTCSS application suite, (2) NTCSS Enterprise Database and (3) 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 to meet Next Generation Network (NGN) requirements both afloat and ashore. MLDN will facilitate the movement of administrative workload from ships to shore.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>  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. 96

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME X3032 NTCSS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments	4.790	4.906	3.314	3.332
RDT&E Articles Quantity			1	1

**FY2002 ACCOMPLISHMENTS:**

Web-enabling of NTCSS applications and enterprise database designed, developed and tested. MLDN initiative started with Business Process Improvement to identify which shipboard business can be put ashore.

**FY 2003 PLAN:**

Continue Web-enabling of NTCSS applications and enterprise database design, development and testing & support and documentation. Prototype Force-level eNTCSS delivered in FY04. 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.

**FY2004 AND FY2005 PLAN:**

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. Prototype MLDN and Enterprise Database delivered in FY05. MS C for Force-level eNTCSS in FY04.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME X3032 NTCSS			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		3.963	5.016		
Current BES/President's Budget		4.790	4.906	3.314	3.332
Total Adjustments		0.827	-0.110	0.000	0.000
Summary of Adjustments					
Sec 8123: Management Reform Initiative		-0.035			
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.008			
Section 8100: Business Process Reform			-0.020		
Section 8135: Economic Assumptions		-0.011	-0.028		
Section 8109: IT Cost Growth			-0.009		
Miscellaneous Navy Adjustments		0.960			
Miscellaneous Department Adjustments		-0.079	-0.053		
Subtotal		0.827	-0.110	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System	PROJECT NUMBER AND NAME X3032 NTCSS
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN 261100 Naval Tactical Command Support Syst Related RDT&E	41.043	46.876	52.594	44.614	81.073	26.882	47.982	67.399	Continuing	Continuing
PE 0605013N X3054 Navy Web-enabling	8.629	2.033	0	0	0	0	0	0		

**(U) E. ACQUISITION STRATEGY:**

The NTCSS Acquisition Strategy is defined in its Single Acquisition Management Plan (SAMP) dtd 7 May 99.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System			X3032 NTCSS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0.600	0.034	10/02	0.034	10/03	0.034	10/04	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various	0.700	0.150	10/02	0.150	10/03	0.150	10/04	Continuing	Continuing	
Training Development											0.000	
Licenses	Various	Various	0.400	0.200	10/02	0.100	10/03	0.100	10/04	Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			1.700	0.384		0.284		0.284		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development	Various	Various	2.741	3.436	10/02	2.045	10/03	2.263	10/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management	Various	Various	0.100	0.180	10/02	0.180	10/03	0.180	10/04	Continuing	Continuing	
Technical Data	Various	Various		0.100	10/02	0.100	10/03	0.100	10/04	Continuing	Continuing	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.841	3.716		2.325		2.543		0.000	11.425	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N Tactical Command System			X3032 NTCSS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.035	0.275	10/02	0.275	10/03	0.275	10/04	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.035	0.275		0.275		0.275		0.000	0.860	
Remarks:												
Contractor Engineering Support	Various	Various	0.184	0.406	10/02	0.306	10/03	0.106	10/04	Continuing	Continuing	
Government Engineering Support	Various	Various	0.030	0.125	10/02	0.124	10/03	0.124	10/04	Continuing	Continuing	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.214	0.531		0.430		0.230		0.000	1.405	
Remarks:												
Total Cost			4.790	4.906		3.314		3.332		Continuing	Continuing	
Remarks:												



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EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604231N Tactical Command System								PROJECT NUMBER AND NAME X3032 NTCSS																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Prototype Phase																																
Force-Level eNTCSS Development																																
MLDN and Enterprise DB Development																																
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
<u>Force-Level eNTCSS</u> Development Test																																
Operational Test																																
<u>MLDN and Enterprise DB</u> Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
LRIP Force-level eNTCSS																																
LRIP MLDN/Enterprise DB																																
FRP Force-level eNTCSS																																
FRP Force-level eNTCSS																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 96

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

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT 0604231N Tactical Command System				PROJECT NUMBER AND NAME X3032 NTCSS			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	Q3							
System Design Review (SDR)	Q4							
Milestone II (MSII)		Q1						
Contract Preparation		Q1						
Software Specification Review (SSR)		Q1						
Preliminary Design Review (PDR)		Q1						
System Development		Q2						
Critical Design Review (CDR)		Q2						
Quality Design and Build		Q2						
Test Readiness Review (TRR)		Q3						
Developmental Testing (Force-level eNTCSS)			Q1					
Eng Dev Model (EDM) Radar Delivery - Lab								
Force-level eNTCSS Software			Q1					
Preproduction Readiness Review (PRR)			Q2					
EDM Radar Delivery - Flt Related								
Milestone C (MS C)			Q3					
Operational Testing (Force-level eNTCSS)			Q3					
Start Low-Rate Initial Production I (LRIP I)								
MLDN and Enterprise DB Software					Q4			
Developmental Testing (MLDN/Enterprise DB)					Q4			
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (MLDN/Enterprise DB)					Q2			
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production Force-level eNTCSS			Q1					
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production MLDN/Enterprise DB					Q4			
IOC								
Full Rate Production (Force-level eNTCSS)			Q4					
Full Rate Production (MLDN/Enterprise DB)						Q1		
First Deployment								

R-1 SHOPPING LIST - Item No. 96

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 83 of 90)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604231N TACTICAL COMMAND SYSTEM			PROJECT NUMBER AND NAME W9123 FORCEnet				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>0.000</b>	<b>12.509</b>	<b>14.654</b>	<b>15.669</b>	<b>17.155</b>	<b>19.099</b>	<b>21.053</b>	<b>23.001</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** On 21 February 2002, in response to conclusions and recommendations from extensive studies by CNO Strategic Studies Group (1998-2002), Army (Future Combat System (FCS)), and Air Force (Joint Battlespace Info-Sphere (JBI)), CNO has directed a quantitative and rigorous analysis of the warfighting requirements and effects of Network Centric Warfare (NCW) across all of Naval Doctrine, Logistics, Tactics, Techniques, Procedures (TTPs), and Systems. The DFn designation letter directed that FORCEnet establish the Navy's future requirements for an end-to-end plan to transform its warfighters, organizations, TTPs, systems, platforms and technologies to a fully netted, integrated, and NCW capable force. FORCEnet transforms the NCW vision into an operational strategy through a transformational spiral development of the next generation of Naval warfighting capabilities. FORCEnet implements the Navy's Transformation Vision – Sea Power 21 – incrementally enhancing the Navy's fundamental asymmetric advantages (sea control, mobility, stealth, reach, precision, firepower and persistence) by integrating Naval, Joint and National information grids (including space based) to achieve unprecedented situational awareness and knowledge management increasing naval warfighting capabilities. Within the Secretary of Defense's Defense Planning Guidance for Fiscal Years 2003-2007, the Department of the Navy (DoN) has published the Naval Transformation Roadmap. FORCEnet, as a main component of CNO's Sea Power 21, referenced on pages 26-28; "will address the following SECDEF's critical operational goals:

- Assure Information Systems and conduct effective Information Operations
- Deny enemy sanctuary by providing persistent surveillance, tracking & rapid engagement with high-volume precision strike
- Leverage IT to develop a joint C4ISR architecture and operational picture"

A key enabler of the CNO's Sea Power 21 Vision, FORCEnet represents the Navy's end-to-end concept, process and plan for evolutionary requirements transformation of its people and warfighting culture, processes, organizational structures, and technologies to a fully netted, integrated, and Network Centric force. FORCEnet will enable the three fundamental capabilities resident in Sea Power 21 – Sea Strike, the ability to project offensive power; Sea Shield, the ability to project defensive power; and Sea Basing, the ability to project U.S. sovereignty around the world and team with joint forces, afloat and ashore. FORCEnet supports Sea Strike by integrating fully networked forces and the 21st Century Warrior into joint and national systems. FORCEnet employs a reduced kill chain by utilizing a network of tiered sensors, vehicles, and platforms to rapidly accumulate and deliver a secure means of sharing knowledge for precision targeting and strike against both high tech and un-sophisticated threats. FORCEnet enables Sea Shield by defining and implementing the capabilities necessary to defend against asymmetric threats (ranging from swarms of small boats, mines, cruise and ballistic missiles, to other sophisticated weapons utilizing low-cost commercial technologies and massive computing power). FORCEnet will provide for the most efficient and effective combination of platforms, sensors, and weapons necessary to assure access and provide the foundation for battlespace dominance. Enhanced and fully integrated intelligence, surveillance and reconnaissance systems will provide critical cueing to support the tenets of Network Centric Warfare. FORCEnet supports Sea Basing as a force multiplier for combat forces, utilizing predictive and adaptive force formulation and in-stride sustainment. The level of total asset visibility afforded by FORCEnet provides the Operational Commander with acute awareness of the full range of available assets and capabilities – thereby enhancing flexibility, speed, efficiency and precision in combat operations. Efforts, starting in FY03, will focus on conducting the detailed technical analysis for FORCEnet mission capability platform and equipment roadmaps, developing the decision support system necessary to manage the roadmaps, establishing a FORCEnet collaborative environment, and supporting experimentation events. The development of the roadmaps will concentrate on defining the Navy's and Marine Corps minimum executable combat capability required to support/sustain all warfighting mission areas. Fact based decision tools are required to perform trades across the operational, technical, financial and programmatic dimensions. The development of the decision support system will generate the necessary metrics, a fact based decision model, and an integrated program order of buy device required to manage the roadmaps.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME W9123 FORCEnet
<p>These tools and methods will provide a rigorous fact-based analysis built upon an open, scalable, multi-level secure architecture to align programs of record and identify system changes. To demonstrate the viability of the proposed roadmaps and the validity of the decision support system, a FORCEnet collaborative and virtual environment will be established to evaluate system changes through prototype, integration and implementation. FORCEnet will perform transformation master planning required across all management execution horizons (Near/Mid/Long-Term) evolving towards a fully-netted human-centrally optimized combat force structure. All transformational horizons will be supported by executable acquisition strategies using an integrated program order-of-buy approach. An integrated program order-of-buy will consist of mission capability platform and equipment roadmaps. Continual trades between acquisition, technology, cost, and capabilities will be performed to achieve a seamless integration of requirements across all warfighting mission areas.</p> <p>The FORCEnet capability will achieve information superiority and dominance on the battlefield by effectively combining information, data, and intelligence gleaned from disparate sensors, networks, decision aids, weapons, and warriors transforming it into real-time comprehensive knowledge of the battlespace. It will leverage information as a resource, as a target, and as a weapon, to provide the effective links and the synergistic systems to allow people, platforms and sensors to communicate and collaborate, and to achieve a state of awareness and knowledge to optimize their mission effectiveness. FORCEnet is the unique vehicle to meet the CNO's requirement to analyze, develop, establish, and sustain a holistic approach to NCW requirements across all Naval warfighting missions. No existing Naval organization provides the analytical rigor across the breath of operational and programmatic warfighting dimensions of the Naval Force.</p> <p>FORCEnet is not a program -- it is a non-redundant integration and alignment effort with the following objectives:    1) Incremental FORCEnet requirements will be developed and validated to drive capability introduction to the fleet through a spiral development using an unprecedented decision support system i.e. FnCE, FnVE that aligns experimentation, existing programs, emerging initiatives, and science and technology.    2) FORCEnet Collaborative Environment (FnCE) that allow trades across operational, technical, financial and programmatic dimensions. Establish analytically defensible investment plans and mission capability platform and equipment roadmaps through qualitative and quantitative analysis. Cost vs. combat capability trades will be executed in conjunction with the FORCEnet virtual environment.    3) FORCEnet Virtual Environment (FnVE) where simulations, hardware and warriors are integrated to ensure real-time, joint test events and analytical products are captured as part of a disciplined implementation of NCW requirements in conjunction with the FnCE to develop cost vs. combat capability trades and roadmaps.    4) Limited Objective Experiments (LOEs) that focus on integrating tactics, techniques and procedures with rapid proto-typing and S&amp;T to develop innovative operational concepts. Develop experimentation roadmaps to align with emerging initiatives and Fleet Battle Experiments.    5) Industry/Government/Joint Teaming through multiple LOEs, simulation and wargaming events.</p> <p>Specific FORCEnet products include: (a) Validated FORCEnet requirements; (b) FORCEnet transformation roadmaps which will define the Navy and Marine Corps minimum executable combat capability required to support/sustain warfighting mission areas; (c) A dynamically reconfigurable set of metrics required to manage FORCEnet combat effects which interacts with the "Fact-Based Decision Model" taking into account financial and technical aspects; (d) A Fact-Based Decision software Model which will contrast investment decision versus warfighting capability; (e) An "Integrated Program Order of Buy" software Model required to prioritize combat systems investments based on their contribution to warfighter mission areas; (f) A collaborative capability required to demonstrate and study the various concepts of integrated warfare and combined force effects provided by FORCEnet; (g) all related acquisition strategies and management plans, program order-of-buys, and program execution plans; and (h) conduct experiments, document results and evaluate prototypes to recommend changes to doctrine, TT&amp;Ps.</p> <p>(U) FORCEnet TEAM AND PARTNERSHIPS:          · OPNAV, CFFC/NETWARCOM, Navy Warfare Development Command (NWDC), ONR, SYSCOMs (NAVSEA, NAVAIR, SPAWAR, MCSC), and RDA CHENG          · Supporting commands and activities: CNO SSG, CNO N00K, MCCDC, High Performance Computing Modernization Office, Naval Post Graduate School, U.S. Naval Academy, Naval War College, COMOPTEVFOR, NETC, DARPA, Army FCS, Air Force JBI, JFCOM and OSD</p>		

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME W9123 FORCEnet

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	12.509	14.654	15.669
RDT&E Articles Quantity				

**FORCEnet**

Industry Survey & Alignment (Industry White Paper Requests, Industry White Paper Evaluation, Acquisition Wargaming, FORCEnet Refinement/Analysis of Requirements); Limited Objective Experiments (Alignment with EC5G, ESG, NFN, TFWeb and FBE-J/K, Alignment with FBE-L, tactics, techniques and procedures; Virtual Environment Test Events (Real-time, Joint, Integrated Hardware, Simulation, and Warriors, Platform/Equipment/Capability Roadmap based on Qualitative/Quantitative Data); Analytical Tools, Methods, Metrics (Requirements/Metrics Definition, Platform Survey, Collaborative Environment Development & Integration, Fact Based Decision Tools); Roadmaps, Analysis and Evaluation (Operational & Engineering Standards, Architecture Analysis, User Information Analysis & Use Case Framework); Collaborative Environment (Capability Alignment, Process Definition & Implementation, Configuration Management).

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME W9123 FORCEnet			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	12.509	14.654	15.669
Total Adjustments		0.000	12.509	14.654	15.669
Summary of Adjustments					
Congressional program reductions			-7.000		
Congressional undistributed reductions			-0.076		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.415	-0.346	-0.338
Other Navy/OSD Adjustments			20.000	15.000	16.007
Reprogrammings					
Congressional increases					
Subtotal		0.000	12.509	14.654	15.669
Schedule:					
N/A					
Technical:					
N/A					

R-1 SHOPPING LIST - Item No. 96

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604231N TACTICAL COMMAND SYSTEM	PROJECT NUMBER AND NAME W9123 FORCEnet
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
N/A										

**E. ACQUISITION STRATEGY:**

Not Applicable

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N TACTICAL COMMAND SYSTEM			W9123 FORCEnet						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	CPFF	VARIOUS		0.800	01/03	1.000	11/03	1.000	11/04	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.800		1.000		1.000		Continuing	Continuing	
Remarks:												
Development Support	CPFF	VARIOUS		1.100	01/03	1.400	11/03	1.500	11/04	Continuing	Continuing	
Software Development	CPFF	VARIOUS		2.310	01/03	2.500	11/03	2.600	11/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	FFP	VARIOUS		1.100	01/03	1.200	11/03	1.300	11/04	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	4.510		5.100		5.400		Continuing	Continuing	
Remarks:												



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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604231N TACTICAL COMMAND SYSTEM			W9123 FORCEnet						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	CPFF	VARIOUS		0.500	01/03	0.700	11/03	0.800	11/04	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.500		0.700		0.800		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	FFP	VARIOUS		1.500	10/02	1.700	10/03	1.800	10/04	Continuing	Continuing	
Government Engineering Support	WR	VARIOUS		4.100	10/02	4.900	10/03	5.200	10/04	Continuing	Continuing	
Program Management Support	FFP	VARIOUS		0.800	10/02	0.900	10/03	1.000	10/04	Continuing	Continuing	
Travel	VARIOUS	VARIOUS		0.299	10/02	0.354	10/03	0.469	10/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	6.699		7.854		8.469		Continuing	Continuing	
Remarks:												
Total Cost			0.000	12.509		14.654		15.669		Continuing	Continuing	
Remarks:												

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604234N, E-2C ADVANCED HAWKEYE			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>75.661</b>	<b>111.186</b>	<b>352.298</b>	<b>537.837</b>	<b>502.064</b>	<b>455.795</b>	<b>473.824</b>	<b>220.954</b>
E3051 - (E-2 Advanced Hawkeye)	<b>75.661</b>	<b>111.186</b>	<b>352.298</b>	<b>537.837</b>	<b>502.064</b>	<b>455.795</b>	<b>473.824</b>	<b>220.954</b>

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

\*Two Multi-Year Procurement E-2C aircraft will be modified to provide RDT&E assets for the E-2 Advanced Hawkeye (Project (E3051).

Project E3051 name formerly known as E2-C Radar Modernization Program has been changed to E-2 Advanced Hawkeye (AHE). The name is being changed in this budget submission to more accurately reflect the fact that, from the outset, this program has planned to build 75 new airframes that will be equipped with the modernized radar system.

The AHE project develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components that modernize the E-2C weapon system to maintain open ocean mission capability while providing the United States Navy (USN) with an effective littoral surveillance and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant 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 AHE project also upgrades or replaces aircraft system components that are either obsolete or becoming unsupportable, upgrades or replaces other aircraft systems as required to support the radar upgrade, and improves the producibility of the weapons system. 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.

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM			PROJECT NUMBER AND NAME E3051, E-2 ADVANCED HAWKEYE			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>75.661</b>	<b>111.186</b>	<b>352.298</b>	<b>537.837</b>	<b>502.064</b>	<b>455.795</b>	<b>473.824</b>	<b>220.954</b>
RDT&E Articles Qty						<b>2*</b>	<b>4</b>	

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project E3051 name formerly known as E2-C Radar Modernization Program has been changed to E-2 Advanced Hawkeye (AHE). The name is being changed in this budget submission to more accurately reflect the fact that from the outset this program has planned to build 75 new airframes that will be equipped with the modernized radar system.

The AHE project develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components that modernize the E-2C weapon system to maintain open ocean mission capability while providing the United States Navy (USN) with an effective littoral surveillance and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant 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 AHE project also upgrades or replaces aircraft system components that are either obsolete or becoming unsupportable, upgrades or replaces other aircraft systems as required to support the radar upgrade, and improves the producibility of the weapons system. 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 FY2003 followed by SD&D beginning in 3rd quarter FY2003. Program quickly ramps up in FY2004 and FY2005 to support a Preliminary Design Review (PDR) in 1st Qtr FY2005 and a Critical Design Review (CDR) in 1st Qtr FY2006. The program plan begins E-2 AHE Pilot Production in FY2007 (long lead on four aircraft), begins the production phase with a Low-Rate Initial Production (LRIP) Milestone C decision in FY2009, and achieves Initial Operational Capability (IOC) in FY2011. P.E. 0204152N, E-2 Squadrons, also supports the radar risk reduction effort on the NC-130H test bed aircraft.

\*Two Multi-Year Procurement E-2C aircraft will be modified to provide RDT&E assets for the AHE program.

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM	PROJECT NUMBER AND NAME E3051, E-2 Advanced Hawkeye

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	50.639	69.404		
RDT&E Articles Quantity				

Pre-System Development and Demonstration (Pre SD&D)  
Award/Extend E-2 AHE Sole Source Pre-SD&D contract to Northrop Grumman Corporation. Began E-2 AHE system architecture trade studies, requirements analysis, radar system demonstration/validation, producibility enhancement and life cycle costs reduction efforts. Fund Radar/Identification Friend or Foe integration, and demonstration/validation of other mission avionics systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		24.296	299.454	462.540
RDT&E Articles Quantity				

System Development and Demonstration (SD&D)  
FY03 - Plan award of SD&D contract with Northrop Grumman Corporation. Enter into SD&D for E-2 AHE program; conduct engineering and development efforts in preparation for System Functional Review for the AHE weapons system.  
FY04/05 - Continue SD&D effort. Conduct engineering and development efforts in preparation for Preliminary/Critical Design Reviews.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.140	4.197	2.114	
RDT&E Articles Quantity				

NC-130H  
FY02 - Provided support for the NC-130H engineering risk reduction efforts.  
FY03 - Conduct System Requirement Review (SRR) for the NC-130H configuration. Procure long lead material. Design and Fabricate NC-130H Weapon System Pallet. Phase Depot maintenance and conduct government oversight and engineering support. Initiate NC-130H support contract.  
FY04 -Fund NC-130H AHE Advanced Development Model (ADM) system flight test & test analysis.

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM	PROJECT NUMBER AND NAME E3051, E-2 Advanced Hawkeye

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.277	13.289	50.730	75.297
RDT&E Articles Quantity				

NAWCAD Support  
Fund Government Engineering and Contractor Engineering Support. Perform Government oversight.  
Fund Ramp up for the Software Functional Review/Preliminary Design Review/Critical Design Review.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	14.605			
RDT&E Articles Quantity				

Funded Classified Development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PROGRAM	PROJECT NUMBER AND NAME E3051, E-2 Advanced Hawkeye			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		78.306	113.681	162.376	178.872
Current BES/President's Budget		75.661	111.186	352.298	537.837
Total Adjustments		-2.645	-2.495	189.922	358.965
Summary of Adjustments					
Congressional program reductions			-0.672		
Congressional undistributed reductions					
Congressional rescissions		-0.167			
SBIR/STTR Transfer		-2.267			
Economic Assumptions		-0.211	-1.823	-8.151	-11.563
Reprogrammings					
Other Navy/OSD Adjustments				198.073	370.528
Congressional increases					
Subtotal		-2.645	-2.495	189.922	358.965
Funding:					
PB04 maintains an IOC in FY11, supports Navy Integrated Fire Control, Counter Air (NIFC-CA) timeline, fields single aircraft configuration, minimizes new builds for the Hawkeye 2000, and provides a fly before LRIP buy strategy. Final cost estimate from the OSD Cost Analysis Improvement Group (CAIG) will be completed prior to MS B and reconciled in PR05.					
Schedule:					
Schedule: The PB03 program schedule has been changed to reflect program restructure. The program was restructured to a single aircraft configuration with a MS B in FY03 and a MS C LRIP decision in FY09. Additionally, pilot production under SD&D begins in FY07 with long lead. MS C LRIP decision is rescheduled to FY09. Initial Operational Capability (IOC) remains in FY11.					
Technical:					
Technical: In PB03, the program planned to test and deliver two configuration blocks of aircraft. The program was restructured to a single configuration for test and delivery.					

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE:
	<b>February 2003</b>

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604234N, E-2C RADAR MODERNIZATION PROGRAM	E3051, E-2 Advanced Hawkeye

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1/E-2C (LI# 13 & 14)	273.668	287.959	228.506	246.098	254.582	221.169	176.684	732.518	8,276.303	10,697.487
APN-5/E-2C (LI# 38)	55.519	23.638	43.139	13.689	12.647	8.265	8.416	8.568	514.343	688.224
APN-6/E-2C (LI# 55)	43.123	20.97	3.675	1.880	7.716	11.739	0.000	17.073	240.729	346.905

Related RDT&E

(U) 0603658N (Ship Self Defense, CEC)

(U) 0204152N (E2 Squadrons)

**E. ACQUISITION STRATEGY:**

Acquisition Strategy is planned for a second quarter FY03 approval in preparation for a MS B decision in third quarter FY03.

R-1 SHOPPING LIST - Item No. 97

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RD&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604234N, E-2C RADAR MODERNIZATION PROGRAM			PROJECT NUMBER AND NAME E3051, E-2 Advanced Hawkeye						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev (Pre-SD&D)	SS/CPFF	CLASSIFIED	14.605								14.605	14.605
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering (Pre-SD&D)	SS/CPFF	NGC, NY	50.639	69.404	10/02						120.043	120.043
Trainer/Trainer Development	TBD	TBD								131.000	131.000	131.000
Licenses												
Tooling												
GFE												
Ancillary Hardware Development	SS/CPFF	NGC, NY	1.140	4.179	01/03	2.114	10/03				7.433	7.433
Primary Hardware Dev (SD&D)	SS/CPAF	NGC, NY		24.296	06/03	299.454	10/03	462.540	10/04	808.012	1,594.302	1,594.302
Contractor Engineering Support	WX	NAWCAD, PAX RIVER, MD	1.600								1.600	
Contractor Engineering Support	CPFF	TBD	0.776	2.200	01/03	2.100	10/03	2.150	10/04		7.226	7.226
Subtotal Product Development			68.760	100.079		303.668		464.690		939.012	1,876.209	
Remarks: Changes in FY2003 since Pres Bud '03: SD&D contract award moved to third quarter FY2003; Pre-SD&D extended.												

R-1 SHOPPING LIST - Item No. 97

**UNCLASSIFIED**





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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604234N, E-2C RADAR MODERNIZATION PROGRAM				E3051, E-2 Advanced Hawkeye					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/WX	NAWCAD, PAX RIVER, MD	2.142			6.896	10/03	8.195	10/04	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Subtotal T&E			2.142	0.000		6.896		8.195		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Management Support	WX/RX	NAWCAD, PAX RIVER, MD	0.149	3.609	01/03	13.722	10/03	24.632	10/04	Continuing	Continuing	
Travel	WX	NAWCAD, PAX RIVER, MD	0.015	0.050	01/03	0.050	10/03	0.050	10/04	Continuing	Continuing	
Transportation												
Subtotal Management			0.164	3.659		13.772		24.682		Continuing	Continuing	
Remarks:												
Total Cost			75.661	111.168		352.298		537.837		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 97

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE 0604245N USMC H-1 Upgrades
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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>167.706</b>	<b>236.039</b>	<b>90.589</b>	<b>61.174</b>	<b>11.168</b>	<b>8.035</b>	<b>3.831</b>	<b>3.836</b>
H2279 USMC H-1 Upgrades	<b>167.706</b>	<b>236.039</b>	<b>90.589</b>	<b>61.174</b>	<b>11.168</b>	<b>8.035</b>	<b>3.831</b>	<b>3.836</b>

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades			PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>167.706</b>	<b>236.039</b>	<b>90.589</b>	<b>61.174</b>	<b>11.168</b>	<b>8.035</b>	<b>3.831</b>	<b>3.836</b>
RDT&E Articles Qty								

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades	PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Technical design, and development	153.348	215.504	62.597	38.308

Conduct pre-flight ground test and first flight of UH-1Y. Continue tooling validation and assembly of remaining EMD aircraft including structural test. Conduct envelope expansion and complete electrical demonstration. Continue development of integrated software.

	FY 02	FY 03	FY 04	FY 05
Program developmental testing	7.555	13.025	12.672	11.826

Program developmental testing includes: live fire test & evaluation, non-firing loads and vibrations, IAS validation and weapons check, structural demonstration, Operational Test Readiness Review (OTRR), firing loads and vibrations, sea trials, IAS validation, weapons check, weapons system accuracy, and EMI testing.

	FY 02	FY 03	FY 04	FY 05
Training and Logistics Support	6.803	7.510	3.320	2.540

Perform level of repair analysis, logistics support analysis, reliability centered maintenance analysis, and integrated mechanical diagnostics.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades	PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Software Support			3.800	4.000

Conduct Software development efforts to support development testing and address operational testing results.

	FY 02	FY 03	FY 04	FY 05
Component Fatigue Testing			8.200	4.500

Conduct component level fatigue testing to establish fatigue lives for development aircraft.



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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604245N USMC H-1 Upgrades	H2279 USMC H-1 Upgrades			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		170.448	241.384	80.547	54.506
Current BES/President's Budget		167.706	236.039	90.589	61.174
Total Adjustments		-2.742	-5.345	10.042	6.668
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-1.475		
Congressional rescissions		-0.001			
SBIR/STTR Transfer		-3.794			
Economic Assumptions		-0.467	-3.870	-2.339	-1.412
Reprogrammings		1.520			
Other Navy/OSD Adjustments				12.381	8.080
Congressional increases					
Subtotal		-2.742	-5.345	10.042	6.668
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades	PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>Prior</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 LI #8, UH-1Y/AH-1Z (4BN/4BW)	5.987			310.799	200.42	338.645	453.639	466.531	473.842	3097.808	5347.671
Quantity				9	7	14	23	23	24	180	

**E. ACQUISITION STRATEGY:**

The USMC H-1 Upgrades is an ACAT 1D program which encompasses Engineering and Manufacturing Development of new end-items prior to a production approval decision. The prime contract is a sole source to Bell Helicopter Textron, Inc.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
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 03 Cost	FY 03 Award Date	FY04 Cost	FY04 Award Date	FY 05 Cost	FY05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS CPFF	Bell Helicopter, Ft. Worth, TX	637.008	198.858	10/02	54.580	10/03	34.758	10/04	0.000	925.204	925.204
Anciliary Hdw Development											0.000	
Training Development	WR	Various	5.132	0.610	11/02	0.470	11/03	0.000		0.000	6.212	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	Various	48.305	13.036	Various	4.562	Various	2.470	Various	0.000	68.373	
Licenses											0.000	
Tooling											0.000	
GFE	Various	Various	15.597	3.000	10/02	2.985	10/03	1.080	10/04	0.000	22.662	
Award Fees*	WR	Bell Helicopter, Ft. Worth, TX	12.668							0.000	12.668	
Subtotal Product Development			718.710	215.504		62.597		38.308		0.000	1,035.119	
<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>												
Development Support	Various	Various				8.200	11/03	4.500	11/04	11.591	24.291	
Software Dev. Electronics											0.000	
Software Dev. Weapons Integration	Various	Various				3.800	11/03	4.000	11/04	15.279	23.079	
Integrated Logistics Support	Various	Various	16.198	5.760	11/02	1.660	11/03	0.980	11/04	0.000	24.598	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analysis											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			16.198	5.760		13.660		9.480		26.870	71.968	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	NAWC Patuxent River	12.495	12.025	11/02	10.872	11/03	7.026	11/04	0.000	42.418	
Operational Test & Evaluation	Various	NAWC Patuxent River		1.000	11/02	1.800	11/03	4.800	11/04	0.000	7.600	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			12.495	13.025		12.672		11.826		0.000	50.018	
Remarks:												
Contractor Engineering Support	C FFP	CCI, Inc.	3.224	0.795	11/02	0.745	11/03	0.745	11/04	0.000	5.509	5.509
Government Engineering Support											0.000	
Program Management Support	C FFP	CCI, Inc.	4.427	0.695	11/02	0.645	11/03	0.545	11/04	0.000	6.312	6.312
Travel	WR	Various	1.587	0.260	11/02	0.270	11/03	0.270	11/04	0.000	2.387	
Transportation											0.000	
Subtotal Management			9.238	1.750		1.660		1.560		0.000	14.208	
Remarks:												
Total Cost			756.641	236.039		90.589		61.174		26.870	1,171.313	
Remarks:												

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EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades								PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test	[Bar] CT/DT																																			
Operational Test					□ CT-IIA				□ OT-IIB				□ OT-IIC OPEVAL																							
<b>Production Milestones</b>																																				
LRIP I FY 04									△ LRIP I Start																											
LRIP II FY 05													△ LRIP II Start																							
FRP FY 06																	△ FRP Start																			
Deliveries																	▼ LRIP I (9)				▼ LRIP II (7)					▼ FRP (14)										

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT 0604245N USMC H-1 Upgrades			PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Developmental Testing (DT-II)	1Q-4Q	1Q-4Q	1Q-3Q					
Operational Testing (OT-IIA)		2Q						
Start Low-Rate Initial Production I (LRIP I)			2Q					
Low-Rate Initial Production I Delivery					2Q-4Q			
Operational Testing (OT-IIB)			2Q					
Start Low-Rate Initial Production II				1Q				
Low-Rate Initial Production II Delivery						1Q-4Q		
Operational Evaluation (OT-IIC) (OPEVAL)				1Q				
Full Rate Production (FRP) Decision				4Q				
Full Rate Production Start					1Q			
Full Rate Production (FRP) Delivery							1Q-4Q	
IOC							2Q	

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-05</b>					R-1 ITEM NOMENCLATURE 0604261N Acoustic Search Sensors			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	16.140	13.621	15.831	20.290	29.402	56.593	66.862	43.551
H0480 ASW SENSORS & PROCESSING	16.140	13.621	15.831	17.427	17.699	9.962	10.150	10.340
H4017 ARPDD				2.863	11.703	46.631	56.712	33.211
<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), the Extended Echo Ranging (EER) family of multi-static active sensor systems, the Hydrostatic Sensor Firing Device (HSFD), the Non-Traditional Acoustic Processing (NTAP), and the Tactical Acoustics Measurement and Decision Aid (TAMDA) programs. GASS provides real time 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; HSFD provides an ASW depth bomb capability; and TAMDA provides a real time ocean environmental measurement capability for modifying sensor field management and sensor utilization. Technology adjuncts to these programs include Sonobuoy Precise Positioning, Air Deployed Low Frequency Projector (ADLFP), Shallow Water Localization and Attack, and Light Weight Search System.</p> <p>(U) (H4017) - The Automatic Radar Periscope Detection and Discrimination (ARPDD) Project provides a fully automated periscope detection, classification, and tracking capability to reliably detect periscopes and masts, and reliably discriminate periscopes from other targets. This capability is suitable for air and surface platforms. This project funds only the airborne application.</p>								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors			PROJECT NUMBER AND NAME H0480 ASW Sensors and Processing			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
H0480 ASW Sensors and Processing	<b>16.140</b>	<b>13.621</b>	<b>15.831</b>	<b>17.427</b>	<b>17.699</b>	<b>9.962</b>	<b>10.150</b>	<b>10.340</b>
RDT&E Articles Quantity								

(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), the Extended Echo Ranging (EER) family of multi-static active sensor systems, the Hydrostatic Sensor Firing Device (HSFD), the Non-Traditional Acoustic Processing (NTAP), and the Tactical Acoustics Measurement and Decision Aid (TAMDA) programs. GASS provides real time 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; HSFD provides an ASW depth bomb capability; and TAMDA provides a real time ocean environmental measurement capability for modifying sensor field management and sensor utilization. Tehcnology adjuncts to these programs include Sonobuoy Precise Positioning, Air Deployed Low Frequency Projector (ADLFP), Shallow Water Localization and Attack, and Light Weight Search System.



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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.107			
RDT&E Articles Quantity				

GASS contract terminated in August 2002 for convenience of the government. Remaining funds will be used to complete the termination and for trainer/training capability for Multi-Static Active Systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.733	12.621	15.831	17.427
RDT&E Articles Quantity				

Software, integration, and test for Multi-Static active sensor systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.300	1.000		
RDT&E Articles Quantity				

Hydrostatic Device system design and trade offs. Prepare for production.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		16.676	13.929	16.332	18.000
Current BES/President's Budget		16.140	13.621	15.831	17.427
Total Adjustments		-0.536	-0.308	-0.501	-0.573
Summary of Adjustments					
Congressional program reductions		-0.036			
Congressional undistributed reductions			-0.082		
Congressional rescissions					
SBIR/STTR Transfer		-0.101			
Economic Assumptions		-0.046	-0.226	-0.431	-0.423
Reprogrammings		-0.353			
Other Navy/OSD Adjustments				-0.070	-0.150
Congressional increases					
Subtotal		-0.536	-0.308	-0.501	-0.573
Schedule:					
( U ) Schedule: Impulsive active source (Q110B) improvement effort added as an Abbreviated Acquisition Program (AAP). 1Q/02 GASS CDR#4 and 3Q/02 GASS MS III deleted - Due to a GASS contract restructure, per NPDM dated 22 January 2002, GIM#4 was dropped, therefore, no CDR required. Also no production tail, therefore no MS III required. TTPRR deleted due to contract termination. TAMDA deleted due to POM-02 budget cut forcing postponment of environmental measurements effort. Added multistatic active integration milestones into emerging P-3 acoustic configurations to provide additional program definition.					
Technical:					
N/A					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>			PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors			PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) APN/SH-60R/(018200)	0	0	0	0	0	0	0	0	0	0
(U) OPN (404800) Q110B	0	9.7	6.8	0	11.5	0	0	3.9	Continuing	Continuing
(U) OPN (404800) HSFD	0	1.9	1.1	0.7	0.7	0.7	0.7	0.7	Continuing	Continuing
<u>(U) Related RDT&amp;E</u>										
(U) P.E. 0603254N (ASW Systems Development)										
<b>E. ACQUISITION STRATEGY:</b>										
The integration of MSA into increased number of P-3 Aircraft can be achieved as an option under the current MSA contracts. Various alternatives of MSA implementation are also being investigated that could require Full and Open competition.										
<b>F. MAJOR PERFORMERS:</b>										

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604261N Acoustic Search Sensors			H0480 ASW Sensors & Processing						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	Sparton, FL	3.178								3.178	3.178
	C/FFP	USSI, IN	2.710								2.710	2.710
	C/CPFF	Misc Contracts	1.000								1.000	1.000
Subtotal Product Development			6.888	0.000		0.000		0.000		0.000	6.888	
Remarks:												
Software Development (GASS)	C/CPIF	Northrop Grumman, NY	46.314								46.314	46.314
Integrated Logistics Support	C/CPFF	Misc GASS Con	12.834								12.834	12.834
Software Development (Phase I)	C/CPFF	Misc /P-3 Baseline Cont's	8.300								8.300	8.300
Software Development (Phase II)	WX	Misc In-House				1.000	10/03	7.040	10/04		8.040	
Technical Data	WX	Misc In-House	1.861	1.291	11/31/02	1.230	10/03	1.630	10/04		6.012	
Studies & Analyses												
Award Fees												
Subtotal Support			69.309	1.291		2.230		8.670		0.000	81.500	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-05</b>			0604261N Acoustic Search Sensors				H0480 ASW Sensors & Processing					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Misc In-House	1.850	0.900	11/02	0.450	11/03	0.400	11/04	Continuing	Continuing	
Subtotal T&E			1.850	0.900		0.450		0.400		Continuing	Continuing	
Remarks:												
Program Mgmt Support (Cont)	C/FFP	Misc/Contracts	38.575	0.817	11/02	0.817	11/03	0.817	11/04		41.026	41.026
Government Engineering Support	WX	Misc In-House	37.736	10.473	10/02	12.184	10/03	7.390	10/04	Continuing	Continuing	
Program Mgmt Support (Gov)	WX	Misc In-House	6.733	0.140	10/02	0.150	10/03	0.150	10/04	Continuing	Continuing	
Travel												
Transportation												
Subtotal Management			83.044	11.430		13.151		8.357		Continuing	Continuing	
Remarks:												
Total Cost			161.091	13.621		15.831		17.427		Continuing	Continuing	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE:							
Multi-Static Active																									February 2003							
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												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
MSA Integration Contract																																
Prototype Phase																																
System Development																																
Q110B CDR																																
MSA Integration CDR																																
EDM Delivery																																
Software Integration																																
Q110B																																
<b>Test &amp; Evaluation Milestones</b>																																
MSA Integration TECH EVAL																																
Development Test																																
Operational Test																																
Q110B FOT&E																																
MSA Integration OPEVAL																																
<b>Production Milestones</b>																																
LRIP I FY 05																																
LRIP II FY 06																																
FRP FY 07																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 8 of 19)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
<b>Multi-Static Active</b>								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp; BA-05</b>	0604261N Acoustic Search Sensors				H0480 ASW Sensors & Processing			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Integration Contract			2Q					
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)	2Q			4Q				
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Intergration		4Q						
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)						2Q		
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)			2Q			4Q		
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

Exhibit R-4a, Schedule Detail  
(Exhibit R-4a, page 9 of 19)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: <b>February 2003</b>																		
<b>Hydrostatic Device</b>																																												
APPROPRIATION/BUDGET ACTIVITY													PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																					
<b>RDT&amp;E, N / BA-05</b>													0604261N Acoustic Search Sensors										H0480 ASW Sensors and Processing																					
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
<b>Acquisition Milestones</b>	MS-B				MS-C																																							
Prototype Phase																																												
System Development	Contract Award	PDR		CDR		FCA/PCA																																						
EDM Delivery					Lab		Flight																																					
Software	N/A																																											
<b>Test &amp; Evaluation Milestones</b>					TRR																																							
Development Test					Design Verification Testing (DVT)																																							
Operational Test (Not Required)					DT Assist																																							
<b>Production Milestones</b>					PRR		Lot I (950)		Lot II (535)		Lot III (306)		New Contract Award(306)		Lot IV		Lot V (306)																											
Contract Production Options																																												
FRP FY 06					Production Decision		HSEF Production						FRP																															
Deliveries																									950				535				306				306				306			

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE:		
<b>Hydrostatic Device</b>						<b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp; BA-05</b>	0604261N Acoustic Search Sensors				H0480 ASW Sensors and Processing			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase (Prior to FY02)								
System Design Review (SDR) (Prior ro FY02)								
Milestone II (MSII) (4Qtr FY01)								
Contract Preparation (FY01)								
Software Specification Review (SSR) (N/A)								
Preliminary Design Review (PDR)	2Q							
System Development	1Q - 4Q	1Q - 3Q						
Critical Design Review (CDR)	3Q							
Quality Design and Build	1Q - 4Q	1Q - 3Q						
Test Readiness Review (TRR)		1Q						
Developmental Testing (DVT/DT Assist)		1Q - 3Q						
Eng Dev Model (EDM) Radar Delivery - Lab (Prior FY02)								
Software Delivery (N/A)								
Preproduction Readiness Review (PRR)		2Q						
Milestone C (MS C)		2Q						
Operational Testing (OT-IIA) (N/A)								
Start Low-Rate Initial Production I (LRIP I) (N/A)								
Software Delivery 2XXSW (N/A)								
Developmental Testing (DT-IIB1) (N/A)								
Developmental Testing (DT-IIB2) (N/A)								
Start Low-Rate Initial Production II (N/A)								
Operational Testing (OT-IIB) (N/A)								
Developmental Testing (DT-IIC) (N/A)								
Functional Configuration Audit (FCA)		2Q						
Low-Rate Initial Production I Delivery (N/A)								
Technical Evaluation (TECHEVAL) (N/A)								
Physical Configuration Audit		2Q						
Operational Evaluation (OT-IIC) (OPEVAL) (N/A)								
Low-Rate Initail Production II Delivery (N/A)								
IOC								
Full Rate Production (FRP) Decision					1Q			
Full Rate Production Start					1Q			
First Deployment			3Q					

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

Exhibit R-4a, Schedule Detail  
(Exhibit R-4a, page 11 of 19)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors			PROJECT NUMBER AND NAME H4017 ARPDD			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
H4017 ARPDD				<b>2.863</b>	<b>11.703</b>	<b>46.631</b>	<b>56.712</b>	<b>33.211</b>

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Automatic Radar Periscope Detection and Discrimination (ARPDD) Project provides a fully automated periscope detection, classification, and tracking capability to reliably detect periscopes and masts, and reliably discriminate periscopes from other targets. This capability is suitable for air and surface platforms. This project funds only the airborne application. This capability is essential for effective detection of submarines in congested Littoral areas. This funding is for engineering development of the ARPDD system. The output will be a productionized form, fit, function incorporation of ARPDD into the AN/APS-137 radar. Two engineering development models for systems integration testing and four pre-production prototypes for environmental, reliability, development and operational testing will be provided. Full testing will be performed to support the production approval milestone (milestone C).

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H4017 ARPDD
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	2.863
RDT&E Articles Quantity				

ARPDD is a new start in FY05 that is a follow-on to a Science and Technology program previously funded by the Office of Naval Research in PE060374N. FY05 funding will be used for project planning, exploring alternatives, acquisition documentation preparation, developing an independent government cost estimate, performing technical trade-off studies, preparation of discrimination software package, developing specifications, and a Statement of Work in preparation for awarding a contract for development of an airborne ARPDD capability.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H4017 ARPDD			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	0.000	0.000	2.863
Total Adjustments		0.000	0.000	0.000	2.863
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions					-0.060
Reprogrammings					
Other Navy/OSD Adjustments					2.923
Congressional increases					
Subtotal		0.000	0.000	0.000	2.863
Schedule:					
( U ) Schedule: N/A					
Technical:					
N/A					

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 14 of 19)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>			PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors			PROJECT NUMBER AND NAME H4017 ARPDD				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Line Item #36 (APN P-3 OSIP 29-94)	0	0	0	0	0	0	0	50.1	TBD	TBD
 <b>E. ACQUISITION STRATEGY:</b>										
Analyze merits of sole source verses competitive procurement. Explore Alternatives. Award prime contract to TBD contractor. Technical support will be provided by NAWCWD (China Lake) and JHU/APL.										
 <b>F. MAJOR PERFORMERS:</b>										
<u>Major Performer</u>	<u>Location</u>	<u>Description of Work</u>	<u>FY03 Amt &amp; Award Date</u>	<u>FY04 Amt &amp; Award Date</u>	<u>FY05 Amt &amp; Award Date</u>					

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604261N Acoustic Search Sensors			H4017 ARPDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Software Development	WX	MISC In-House						1.163	10/04		1.163	
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses	CPFF	Misc/Contracts						0.500	11/04		0.500	0.500
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		1.663		0.000	1.663	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604261N Acoustic Search Sensors			H4017 ARPDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Program Mgmt Support (Cont)	TBD	Misc/Contracts						0.250	11/04		0.250	
Government Engineering Support	WX	Misc In-House						0.400	10/04		0.400	
Program Mgmt Support (Gov)	WX	Misc In-House						0.540	10/04		0.540	
Travel								0.010	10/04		0.010	
Transportation												
Subtotal Management			0.000	0.000		0.000		1.200		0.000	1.200	
Remarks:												
Total Cost			0.000	0.000		0.000		2.863		0.000	2.863	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:																																															
Automatic Radar Periscope Detection and Discrimination (ARPDD)																								February 2003																																															
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																																																			
RDT&E, N / BA-05												0604261N Acoustic Search Sensors								H4017 ARPDD																																																			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009																																										
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																							
<b>Acquisition Milestones</b>																																																																							
Prototype Phase (Prior to FY02)																																																																							
System Development																																																																							
EDM & Pre Production Delivery																																																																							
Software																																																																							
<b>Test &amp; Evaluation Milestones</b>																																																																							
Development Test																																																																							
Operational Test																																																																							
<b>Production Milestones</b>																																																																							
LRIP FY 09																																																																							
Deliveries																																																																							



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CLASSIFICATION:

Exhibit R-4a, Schedule Detail <b>Automatic Radar Periscope Detection and Discrimination (ARPD)</b>						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp; BA-05</b>	PROGRAM ELEMENT 0604261N Acoustic Search Sensors				PROJECT NUMBER AND NAME H4017 ARPD			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
Systems Requirement Review (SRR)				2Q				
System Functional Review (SFR)				3Q				
Milestone II (MS B)				4Q				
Contract Preparation				1Q - 4Q				
Software Specification Review (SSR)					3Q			
Preliminary Design Review (PDR)					4Q			
System Development					1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Critical Design Review (CDR)						3Q		
Quality Design and Build						3Q-4Q	1Q - 4Q	
Test Readiness Review (TRR)							4Q	
Developmental Testing (DT-IIA)							4Q	1Q - 2Q
Lab Units							2Q - 3Q	
Software Delivery							4Q	
Preproduction Readiness Review (PRR)								1Q
EDM & Pre Production Prototype Delivery								1Q - 2Q
Milestone C (MS C)								2Q
Operational Testing (OT-IIA)								1Q - 3Q
Start Low-Rate Initial Production (LRIP)								2Q
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 99

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 19 of 19)

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604262N, V-22A			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>415.819</b>	<b>410.780</b>	<b>0.000</b>	<b>306.982</b>	<b>115.378</b>	<b>44.558</b>		
H1425, V-22A	<b>415.819</b>	<b>410.780</b>	<b>441.142*</b>	<b>306.982</b>	<b>115.378</b>	<b>44.558</b>		

**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. This program is funded under Engineering Manufacturing and Development (EMD) because it encompasses engineering and manufacturing development of new end-items prior to a production approval decision.

\*\$34 million transferred to SOCOM CV-22 program (RDT&E, DW, PE 1160404BB) to complete modification of additional test asset (ATA) which began in FY 2003.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604260N, V-22A			PROJECT NUMBER AND NAME H1425, V-22			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>415.819</b>	<b>410.780</b>	<b>441.142</b>	<b>306.982</b>	<b>115.378</b>	<b>44.558</b>		
RDT&E Articles Qty								

**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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22A	PROJECT NUMBER AND NAME H-1425, V-22
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Contractor Activities	171.724	214.871	245.265	128.140
RDT&E Articles Quantity	0	0	0	0

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 04. Continue development of maintenance training equipment. Continue Weapons Repairable Assembly (WRA) and Test Program Set (TPS) development. Continue logistics, flight test, and flight test support, address correction of deficiencies, and provide funding for the V-22 Way Forward. Continue contracted development efforts on aircraft #8 and #10. Continue development of the Ground Collision Avoidance System (GCAS).

	FY 02	FY 03	FY 04	FY 05
Field Activity Effort	121.366	76.309	51.877	5.842
RDT&E Articles Quantity	0	0	0	0

Continue in-house field activity support of Integrated Test Team (ITT), Integrated Product Teams (IPT), 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 04. Continue field development efforts on aircraft #8, #10, and three LRIP aircraft. Provide R&D support in the areas of Reliability and Maintainability (R&M) data analysis, loads and dynamics, electromagnetic environmental effects, V-22 flight controls, survivability, subsystems, shipboard compatibility, propulsion, V-22 avionics, facilities, structures, communications, Small Business Innovative Research, etc. Continue logistics, flight test, and flight test support, and addressed correction of deficiencies.

	FY 02	FY 03	FY 04	FY 05
CV-22 Block-0 Development	122.729	119.600	144.000*	173.000
RDT&E Articles Quantity	0	0	0	0

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. 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. Support CV-22 Additional Test Asset (ATA) flight test infrastructure and contractor maintenance/logistics support for ATA.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22A	PROJECT NUMBER AND NAME H1425, V-22			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		442.787	420.109	364.303	225.321
Current BES/President's Budget		415.819	410.780	441.142	306.982
Total Adjustments		-26.968	-9.329	76.839	81.661
Summary of Adjustments					
Congressional program reductions		0.000	0.000	0.000	0.000
Congressional undistributed reductions		-0.018	-2.592	0.000	0.000
Congressional rescissions		-0.945	0.000	0.000	0.000
SBIR/STTR Transfer		-8.543	0.000	0.000	0.000
Economic Assumptions		-1.118	-6.737	-10.252	-6.586
Reprogrammings		-16.344	0.000	0.000	0.000
Sponsor/FMB/NAVAIR adjustments		0.000	0.000	87.091	88.247
Congressional increases		0.000	0.000	0.000	0.000
Subtotal		-26.968	-9.329	76.839	81.661
Schedule:					
Schedule updated to reflect revised program baseline.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 100

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22A	PROJECT NUMBER AND NAME H1425, V-22
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
16400 / V-22										
V-22 APN-1	804.703	1,052.799	872.167	844.283	1,480.875	2,292.040	2,334.362	2,375.983	14,715.307	26,772.519
V-22 APN-6 Spares	84.485	14.726	79.477	189.083	225.062	35.885	37.718	40.971	288.209	1,228.098
59000 / V-22										
V-22 APN-5	17.076	4.847	4.814	34.458	19.186	23.941	24.38	24.817	361.000	514.519
Related RDT&E:										
0401318F CV-22	188.600	11.449	65.703	16.482	27.602	9.615	7.135	7.526	TBD	TBD
1160404BB CV-22	90.844	59.820	36.456	41.420	22.893	0.000	0.000	0.000	TBD	TBD

**E. ACQUISITION STRATEGY: \***

The MV-22 is currently in EMD under contract N00019-93-C-0006 awarded to Bell-Boeing on 22 Oct 92, and definitized in May 94. As a result of mishaps during and subsequent to MV-22 OPEVAL (Apr and Dec 00), the program was restructured employing a phased approach to return to flight and tactical introduction. The Contractor and Government defined deficient areas within the program/aircraft requiring correction prior to return to flight. A Block Upgrade approach has been planned, with required efforts being identified in Block "A", "B", and "C". Block "A" includes those efforts necessary to return the V-22 to safe and operational fleet operations. Block "B" includes those efforts necessary to improve the effectiveness and suitability of the aircraft. Block "C" includes mission enhancements like forward cabin redesign and a full IETMS upgrade. Non-recurring development activities are to be initiated and completed for all efforts identified to be in Block "A", "B", and "C". The Contractor will develop specific Statements of Work and Preliminary Specification Change Notices required to integrate the Block Upgrade efforts into the baseline EMD Program. A Systems Requirements Review, Initial Design Review, and Final Design Review will be held for each of the Block efforts so the design maturity can be reviewed and the Government can redirect activities as appropriate. The CV-22 EMD program is structured in Blocks to define an evolutionary approach to achieving full operational capability. Block "0" is the initial baseline CV-22 variant. Block "10" enhances mission capability with the addition of Directional Infrared Countermeasures. Additional Blocks are in planning to continue the growth process throughout the operational life of the weapon system.

**F. MAJOR PERFORMERS: \*\***

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

\*\* Required for DON and OSD submit only.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604262N, V-22A			H1425, V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prime Hdw - Airframe	SS CPAF	BELL-BOEING, PaxRiver, M	3,788.307	326.201	01/03	385.776	11/03	277.469	11/04	105.167	4,882.920	4,882.920
Award Fee	SS/CPAF	BELL-BOEING, PaxRiver, M	179.057	4.281	01/03	3.993	11/03	2.531	11/04	1.000	190.862	190.862
Prime Hdw - Engine	C/CPIF	ALLISON, INDIANAPOLIS, IN	184.869	1.923	11/02	0.100	11/03	0.000	11/04	0.000	186.892	186.892
Field Activity	Various	Various	2,894.629	7.864	12/02	16.932	11/03	1.868	11/04	23.153	2,944.446	
Subtotal Product Development			7,046.862	340.269		406.801		281.868		129.320	8,205.120	
Remarks:												
ASN or HQMC directed studies	Various	Various	3.467								3.467	
Logistics, Engineering, & Test Spt	WX	NAWCAD PAX RIVER, MD	135.005	59.306	01/03	28.179	11/03	21.433	11/04	23.398	267.321	
Logistics, Engineering, & Test Spt	MIPR	EDWARDS AFB, CA	13.121	4.934	01/03	0.000	11/03	0.000	11/04	0.000	18.055	
Logistics and Support Equipment	WX	NAWCAD LAKEHURST, NJ	15.484	6.271	01/03	6.162	11/03	3.681	11/04	7.218	38.816	
Subtotal Support			167.077	70.511		34.341		25.114		30.616	327.659	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604262N, V-22A			H1425, V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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:												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			7,213.939	410.780		441.142		306.982		159.936	8,532.779	
Remarks:												

R-1 SHOPPING LIST - Item No. 100

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604262N, V-22A										PROJECT NUMBER AND NAME H-1425, V-22												
Fiscal Year	2002				2003				2004				2005				2006				TO COMPLETE											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Program Milestones</b>	Program Reviews												MV-22 IOC																			
<b>Engineering Milestones</b>																																
<b>Test &amp; Evaluation (T&amp;E) Milestones</b>																																
<b>Contract Milestones</b>																																

R-1 SHOPPING LIST - Item No. 100

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



EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE						
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>		0604264N/Aircrew Systems Development						
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>15.915</b>	<b>7.524</b>	<b>8.765</b>	<b>8.032</b>	<b>3.662</b>	<b>2.608</b>	<b>2.733</b>	<b>2.729</b>
W0606 Aircrew Systems Development	<b>8.344</b>	<b>6.547</b>	<b>8.765</b>	<b>8.032</b>	<b>3.662</b>	<b>2.608</b>	<b>2.733</b>	<b>2.729</b>
W2877 Joint Helmet Mounted Cueing System	<b>2.412</b>							
W2879 SIIS Ejection Program	<b>0.977</b>	<b>0.977</b>						
W9061 Intensifier Tube Advanced Development	<b>4.182</b>							

**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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development			PROJECT NUMBER AND NAME W0606/Aircrew Systems Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>8.344</b>	<b>6.547</b>	<b>8.765</b>	<b>8.032</b>	<b>3.662</b>	<b>2.608</b>	<b>2.733</b>	<b>2.729</b>
RDT&E Articles Qty								

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

**(U) SUBPROJECTS:**

- (U) **ESCAPE AND CRASH SAFETY:** Navy 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 systems 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/Advanced Integrated Life Support Systems (AILSS), Liquid Oxygen to ON-Board Oxygen Generating System (LTO), Common Smoke Mask (CSM), Joint Protective Air Crew Ensemble (JPACE), Combat Survivor Evader Locator (CSEL), and Mobile Aircrew Restraint System (MARS)/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 Panoramic Night Vision Goggle (PNVG), JHMCS Night Attack, Agile Frequency Laser Eye Protection, and Laser Eye Protection Improvement Program (LEPIP), Joint Aircrew Laser Eye Protection Visor (JALEPV).

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W0606/Aircrew Systems Development

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.852	2.416	2.791	1.670
RDT&E Articles Quantity				

FY 2002 - NACES P3I: Continued aircraft (A/C) platform installation of phase I technologies. Initiated retrofit ECP for JHMCS provisions. Finalized phase II injury risk reduction trade study and established pricing for candidate modifications. Completed qualification tests (DT) and delivered first production units of selected phase II candidate modifications. AV-8B: Completed system and qualification testing (DT) and commenced A/C platform installation of performance improvements. Completed CDR and testing of Electronic Airspeed Altitude Sensor (EAAS). CWTS: Delivered initial production quantities of H-1 system and completed on aircraft integration assessments. Continued preliminary design on H-3 and H-46. ESIRP: Purchased long lead DT test hardware and prototype design fabrication. Completed SRD and PDR. FY 2003 - NACES P3I: Continue A/C platform installation of phase I technologies. Begin retrofit of JHMCS provisions. Initiate system design interface and system demonstration testing (DT) on selected phase II injury risk reduction candidate technology improvements. Continue production incorporation of selected phase II candidate modifications. AV-8B: Continue A/C platform installation of performance improvements and begin EAAS installation. CWTS: Implement design weight changes for H-1 and conduct delta demonstration testing (DT). Complete H-3/H-46 design efforts and incorporate ECP's. ESIRP: Conduct system level risk reduction demonstration (DT). Conduct component qualification (component DT) on selected stability and restraint candidate system technologies. Conduct CDR. FY 2004 - NACES P3I: Complete aircraft platform installation of phase I technologies. Complete design interface and system demonstration testing (DT) of selected phase II technologies and begin qualification efforts. AV-8B: Complete A/C platform installations of performance improvements and EAAS. Complete component qualification testing (DT) of restraint upgrades. CWTS: Commence installation of H-1 crashworthy seats. Conduct seat integration and demonstration testing (DT) for H-3/H-46 designs. ESIRP: Conduct system level qualification testing (DT) on select stability and restraint candidate system technologies. Commence preparation of platform ECP's. FY 2005 - NACES P3I: Complete system qualification testing and commence A/C incorporation of select phase II technologies. AV-8B: Complete ECP's and begin incorporation of restraint improvements. CWTS: Complete qualification (DT) of H-3/H-46 designs. ESIRP: Complete platform ECP's and begin aircraft introduction of stability and restraint candidate technologies.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.330	1.541	2.866	3.743
RDT&E Articles Quantity				

FY 2002 - ECWIP/SOASI: Continued evaluations and authorizations of state of the art survival items to include research of SOASI specific to Fleet for military hostile operations. PPA: Initiated DT IIA and preliminary NTAB fleet assessment of potential multi-climate protection system. AAEP: Completed mapping of all USN/USMC pilot crew stations. Published NAVAIRINST 3710.9C. Drafted technical report with anthropometric restriction codes on all aircraft. AEPS/AILSS: Completed testing initiated in FY-01. Developed warfare analysis of requirements. Drafted ORD. LOX TO OBOGS (LTO): Continued acquisition planning for replacement of Liquid Oxygen System with OBOGS for Naval Aircraft; prepared program documentation to include Systems Requirements Document (SRD) Program Development Plan, EA-6B integration study, prepared OBOGS performance spec, altitude lab preparation, conducted dynamic consumption test. CSM/AOS: Prepared sources sought and conducted market research. Performed feasibility analysis on Solid State Oxygen Monitor (SSOM) improvement alternatives. TSSH/MARS: Performed modeling studies to identify crashworthy mounting locations in aircraft cabin. Conducted HH-60H aircraft ground assessment to define operational mission requirements and to identify feasible mounting locations. Performed initial structural analysis for candidate mounting locations. Conducted follow-up aircraft assessments for SH-60B/F aircraft. Developed draft system performance specification. Prepared Statement of Work (SOW) and solicitation package for H60 series aircraft. FY 2003 - ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Conduct DT IIB testing to evaluate fit, performance and capability, finalize designs and procure systems in LRIP quantity for a fleet assessment. AAEP: Evaluate additional aircraft seat position (crew seats, flight engineer) in aircraft to equip for accommodation issues. 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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W0606/Aircrew Systems Development
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**(U) B. Accomplishments/Planned Program**

AEPS/AILSS: ORD Staffing. Program Planning. Prepare Acquisition Plan and Risk Assessment demonstrated technology. LOX TO OBOGS (LTO): Conclude integration studies of EA-6B aircraft and continue risk reduction and acquisition planning for remaining LOX equipped Naval Aircraft. CSM/AOS: Publish sources sought and continue DT of full face smoke masks and 02 containment devices for Naval fixed wing non-ejection aircraft. Perform technical evaluation for CSM. Complete program development plan for all platforms. TSSH/MARS: Conduct DT on H-60 MARS. Conduct modeling studies on other USN/USMC platforms. Prepare/revise system performance specification to accommodate additional platform requirements. Prepare solicitation data package for additional platforms. FY 2004 - ECWIP/SOASI: Continue evaluation and authorizations of state of the art survival items. PPA: Complete fleet assessment, finalize technical data package, begin procurement and fielding of the Multi-Climate Protection System. AAEP: Continue evaluating additional aircraft seat positions in aircraft so equipped for accommodation issues. Publish technical reports on accommodation levels in aircraft. Continue developing detailed cockpit CAD pictures. Reevaluate aircraft and anthropometric restriction codes as modifications to existing aircraft and/or aircrew clothing and equipment occur or as new aircraft are introduced. AEPS/AILSS: Continue PDRR, MS B. Release competitive solicitation. LOX TO OBOGS (LTO): Conclude integration studies of E-2 aircraft and continue risk reduction and acquisition planning for remaining LOX equipped Naval Aircraft. CSM/AOS: Continue DT of full face smoke masks and 02 containment devices for Naval fixed wing non-ejection aircraft. TSSH/MARS: Conduct DT on follow-on USN/USMC platforms. Provide upgraded MARS to Joint Service platforms and identify Joint Service requirements. FY 2005 - ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Continue procurement and fielding of MCP system. AAEP: Reevaluate aircraft and anthropometric restriction codes as modifications to existing aircraft and/or aircrew clothing and equipment occur, or as new aircraft are introduced. AEPS/AILSS: Conduct DT testing. LOX TO OBOGS (LTO): Conclude integration studies of F-18 equipped aircraft and continue risk reduction for remaining LOX equipped Naval Aircraft. CSM/AOS: Conduct initial product demonstrations of full smoke masks and 02 containment devices for Naval fixed wing non-ejection aircraft. TSSH/MARS: Commence DT and prepare ECP.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.162	2.590	3.108	2.619
RDT&E Articles Quantity				

FY 2002 - NVS: Continued to monitor and participate in PNVG Advanced Technology Development. JHMCS: Completed F/A-18 E/F DT/OT, LRIP III, reengineered F/A-18 C/D integration, JHMCS Night Attack: Completed studies. JALEPV: Received LRIP approval. FY 2003 - NVS: Continue to monitor and participate in WFOVNVG (formerly PNVG) testing. JHMCS: F/A-18 E/F Correct OT deficiencies, F/A-18 E/F MS III. JHMCS Night Attack: Interface Control Design (CD). JALEPV: Start Fleet assessment. LRIP II. IDNAWH: Program Design Review (PDR). FY 2004 - JHMCS P3I Night Attack: Initiate DT. JALEPV: MS III. LEPIP: (formerly Laser Spectacle Improvements): Commence DT. IDNAWH: Initiate DT/OT. FY 2005 - JHMCS P3I Night Attack: Initiate OT. IDNAWH: Continue DT/OT. NVS: WFOVNVG testing. Agile Frequency Laser PDR.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W0606/Aircrew Systems Development			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		7.649	6.695	8.679	7.404
Current BES/Presidents Budget:		8.344	6.547	8.765	8.032
Total Adjustments		0.695	-0.148	0.086	0.628
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.039		
Congressional rescissions		-0.016			
SBIR/STTR Transfer		-0.041			
Economic Assumptions		-0.024	-0.109	-0.255	-0.210
Reprogrammings		0.776			
Other Navy/OSD Adjustments				0.341	0.838
Subtotal		0.695	-0.148	0.086	0.628
(U) Schedule:					
FY 03 - CWTS H-1 has been delayed from FY 2001 to FY 2003 in order to perform a weight reduction design change and delta DT to complete the effort. FY 04 - JHMCS P3I program commencement was delayed from FY 2003 to FY 2004 since the delay in the start of operational testing slipped MS III. FY 04 - JALEPV MS III slipped from FY 2003 to FY 2004 due to the revised MS III schedule based on deficiencies being addressed and availability of funding.					
(U) Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 101

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development			PROJECT NUMBER AND NAME W0606/Aircrew Systems Development					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Aviation Life Support - OPN 424400	25.818	18.183	27.749	27.351	53.617	26.318	26.722	27.207		
Aviation Life Support Mods - APN 057500	0	0.493	6.358	4.882	8.369	23.588	21.524	10.718		
<b>(U) E. ACQUISITION STRATEGY:</b>										
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.										
<b>(U) F. MAJOR PERFORMERS:</b>										

R-1 SHOPPING LIST - Item No. 101



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604264N/Aircrew Systems Development			W0606/Aircrew Systems Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WX/RX	NAWCAD, PAX RIVER, MD	38.485	2.687	Various	4.793	Various	4.887	Various	Continuing	Continuing	
Systems Engineering	WX/RX	NAWCWD, CHINA LAKE, CA	3.826	0.731	Various	0.764	Various	0.377	Various	Continuing	Continuing	
Systems Engineering	WX/RX	NSWC, INDIAN HEAD, MD	0.425	0.264	Various	0.340	Various	0.180	Various	Continuing	Continuing	
Systems Engineering	WX/RX	NADEP, CHERRY PT, NC		0.180	Various	0.115	Various	0.090	Various	Continuing	Continuing	
Systems Engineering	WX/RX	NAWCAD, LAKEHURST, NJ		0.071	Various	0.073	Various	0.073	Various	Continuing	Continuing	
Ancillary Hardware Development	TBD	NAVAIR		1.150	Various	1.250	Various	0.603	Various	Continuing	Continuing	
Award Fees												
Subtotal Product Development			42.736	5.083		7.335		6.210		Continuing	Continuing	
Remarks:												
Integrated Logistics Support	WX/RX	NAWCAD, PAX RIVER, MD	16.785	0.304	Various	0.500	Various	0.460	Various	Continuing	Continuing	
Integrated Logistics Support	WX/RX	NSWC, CRANE, IN		0.200	Various	0.250	Various	0.200	Various	Continuing	Continuing	
Studies & Analyses	WX/RX	NAWCAD, PAX RIVER, MD		0.300	Various							0.300
Award Fees												
Subtotal Support			16.785	0.804		0.750		0.660		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604264N/Aircrew Systems Development			W0606/Aircrew Systems Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX/RX	NAWCAD, PAX RIVER, MD	35.880	0.450	Various	0.492	Various	0.182	Various	Continuing	Continuing	
Developmental Test & Evaluation	WX/RX	NADEP, CHERRY PT., NC	0.221	0.090	Various	0.075	Various	0.230	Various	Continuing	Continuing	
Developmental Test & Evaluation	WX/RX	NSWC, INDIAN HEAD, MD		0.120	Various	0.113	Various	0.150	Various	Continuing	Continuing	
Operational Test & Evaluation	WX/RX	COMOPTEVFOR, Norfolk						0.600	Various	Continuing	Continuing	
Award Fees												
Subtotal T&E			36.101	0.660		0.680		1.162		Continuing	Continuing	
Remarks:												
SBIR Assessment												
			0.041								0.041	
Subtotal Management												
			0.041	0.000		0.000		0.000		0.000	0.041	
Remarks:												
Total Cost												
			95.663	6.547		8.765		8.032		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE: <b>February 2003</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development										PROJECT NUMBER AND NAME W0606/Aircrew Systems Development												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
LOX TO OBOGS																																
CWTS																																
MARS																																
PPA																																
JALEPV																																
ESIRP																																
JHMCS P3I NIGHT																																
<b>Test &amp; Evaluation Milestones</b>																																
CWTS																																
JALEPV																																
MARS																																
PPA																																
NACES II P3I																																
JHMCS P3I NIGHT																																
WFOV NVG NIGHT																																
ESIRP																																
<b>Production Milestones</b>																																
PPA																																
MARS																																
JALEPV																																
JHMCS																																
<b>Deliveries</b>																																

R-1 SHOPPING LIST - Item No. 101

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>			PROGRAM ELEMENT 0604264N/Aircrew Systems Development			PROJECT NUMBER AND NAME W0606/Aircrew Systems Development				
<b>Schedule Profile</b>			<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>
LOX TO OBOGS MSB					2Q					
MARS SPECS - H-60, PLATFORMS, LRIP, JOINT			3Q	3Q	4Q	3Q				
PPA - MSB, PDR&LRIP, CDR			2Q	2Q		2Q				
JALEPV -DT&OT, MSIII&FRP				4Q	2Q					
ESIRP - PDR & DT/OT CDR			4Q	3Q						
JHMCS - LRIP III, FRP			1Q	1Q						
JHMCS P3I NIGHT - PDR, CDR, DT, OT			3Q	3Q	4Q	3Q				
CWTS - DT				4Q						
WFOV NVG NIGHT - DT, OT					4Q	3Q				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development			PROJECT NUMBER AND NAME W2879/SIIS Ejection Program			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.977</b>	<b>0.977</b>						

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

The FY 2002 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 of 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.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W2879/SIIS Ejection Program

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.977	0.977		
RDT&E Articles Quantity				

FY 2002: Initiated development of restraint improvements and identify integration risks. Contract Award November 2002. FY 2003: Continue to develop restraint improvements and identify integration risks.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W2879/SIIS Ejection Program			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.991	0.000	0.000	0.000
Current BES/Presidents Budget:		0.977	0.977	0.000	0.000
Total Adjustments		-0.014	0.977	0.000	0.000
Summary of Adjustments					
Congressional program reductions			-0.006		
Congressional undistributed reductions					
Congressional rescissions		-0.002			
SBIR/STTR Transfer		-0.013			
Economic Assumptions		-0.003	-0.017		
Reprogrammings		0.004			
Other Navy/OSD Adjustments			1.000		
Congressional increases					
Subtotal		-0.014	0.977	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 101

# UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604270N Electronic Warfare Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	119.237	79.543	256.701	390.964	431.955	337.740	263.017	38.827
E0556 EW Counter Response	80.409	52.615	36.644	38.452	35.904	36.514	37.181	37.643
E2175/E2635 Tactical Air Electronic Warfare	28.136	13.063	13.639					
E3063 AEA Follow On	5.000	9.780	204.822	350.768	394.280	299.110	224.673	
R2260 Specific Emitter Identification	0.965	0.996	0.764	0.827	0.826	0.975		
X2422 LOCO GPSI	3.756	2.054						
Z1742 EW Technical Development and Testing	0.971	1.035	0.832	0.917	0.945	1.141	1.163	1.184

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(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.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E0556 EW Counter Response			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>85.409</b>	<b>52.615</b>	<b>36.644</b>	<b>38.452</b>	<b>35.904</b>	<b>36.514</b>	<b>37.181</b>	<b>37.643</b>
RDT&E Articles Qty	<b>10</b>							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(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 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.

The Airborne Electronic Attack (AEA) aircraft AOA has been completed for the replacement to the EA-6B. Transition to this weapon system, known as the EA-18G will commence in 2006 and will coincide with the planned retirement of the EA-6B.

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response
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**B. Accomplishments/Planned Program**

ICAP III	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	58.032	35.349	13.011	12.935
RDT&E Articles Quantity	2			

- (U) Continue development of ICAP III system. Efforts will concentrate on completion of Operational Testing (OPEVAL). Continue the baseline ICAP III software update. Continue testing of correction of defect modifications for the ICAP III program. Full rate production contract will be put in place in FY04.

ICAP III UPDATE	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.455	9.790	10.791
RDT&E Articles Quantity				

- (U) Continue updating the baseline ICAP III system to include integration of avionics items which include the second Embedded Global Positioning System/Inertial Navigation System (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) aircraft.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response

**B. Accomplishments/Planned Program (Cont.)**

Low Band Transmitter	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.395	1.976		
RDT&E Articles Quantity	8			

(U) Continue developmental testing (TECHEVAL). Conduct Operational Assessment (OA) and Operational Test (OPEVAL) of LBT.

Mission Planning	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.986	1.976	1.974
RDT&E Articles Quantity				

(U) Transition of the Tactical EA-6B Mission System (TEAMS) software to the Joint Mission Planning Systems (JMPS).

LINK-16	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.647		1.780	2.400
RDT&E Articles Quantity				

(U) Continue to develop Link-16 capability. Commence systems integration of Link-16 in FY-02. Complete testing and correction of defect of the Link-16 modification in FY-04.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response

**B. Accomplishments/Planned Program (Cont.)**

AOA	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.951			
RDT&E Articles Quantity				

(U) Complete the Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft replacement for the EA-6B.

JATO	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.770	9.849	10.087	10.352
RDT&E Articles Quantity				

(U) Continue software development and test support for ongoing new threat development and testing in ICAP II and ICAP III via the Jammer and Techniques Optimization (JATO) program

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		87.837	66.907	40.693	39.380
Current BES/President's Budget		85.409	52.615	36.644	38.452
Total Adjustments		-2.428	-14.292	-4.049	-0.928
Summary of Adjustments					
Congressional program reductions			-13.100		
Congressional undistributed reductions			-0.319		
Congressional rescissions		-0.179			
SBIR/STTR Transfer		-0.614			
Economic Assumptions		-0.238	-0.873	-0.961	-0.855
Reprogrammings		3.403			
Other Adjustments		-4.800		-3.088	-0.073
Congressional increases					
Subtotal		-2.428	-14.292	-4.049	-0.928
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2001 &amp; Prior</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 # 24, EA-6 Series	344.0	150.349	223.527	213.402	183.402	113.544	40.583	21.709	25.546	160.700	1,476.762

**E. ACQUISITION STRATEGY: \***

- 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.

R-1 SHOPPING LIST - Item No. 102

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev -LBT	FPI	BAE Systems Lansdale, PA	31.567								31.567	31.567
Primary Hdw Develop - ICAP III	C/CPAF	Northrop Grumman, NY	209.528	25.965	11/02	9.811	11/03	10.328	11/04		255.632	256.632
Primary Hdw Develop - Spray Cool	CPFF	Isothermal Sys Research	2.612								2.612	2.612
Primary Hdw Develop - Link 16	CPFF	Northrop Grumman, NY	55.797			0.890	02/04				56.687	56.687
Primary Hdw Develop - Min of ICAP	TBD	Northrop Grumman, NY	2.636								2.636	2.636
Primary Hdw Develop - LOCO GPSI	TBD	SPAWAR	8.786								8.786	
											0.000	
Aircraft Integration - Spray Cool	CPFF	Isotermal Sys Research	6.531								6.531	6.531
											0.000	
Systems Engineering	WX	NRL, Wash DC	8.541	0.500	10/02	0.929	10/03	1.525	10/04	Continuing	Continuing	
Systems Engineering	WX	NADEP, JAX	5.227	0.628	10/02	0.675	10/03	1.300	10/04	Continuing	Continuing	
Systems Engineering	WX	NSWC Crane	8.116	0.459	10/02	2.695	10/03	4.595	10/04	Continuing	Continuing	
Systems Engineering	WX	NAWCAD PAX	15.252	0.596	10/02	2.200	10/03	3.367	10/04	Continuing	Continuing	
Systems Engineering	WX	NAWCAD LKE	2.804	0.406	10/02	0.345	10/03	1.193	10/04	Continuing	Continuing	
Systems Engineering	WX	NAWCWD, PT MUGU	23.997	2.555	10/02	3.216	10/03	6.524	10/04	Continuing	Continuing	
Systems Engineering	Various	VARIOUS	45.836	0.400	10/02	5.701	10/03	5.220	10/04	Continuing	Continuing	
											0.000	
											0.000	
Award Fees - ICAP III	C/CPAF	Northrop Grumman	6.900	8.680	09/03						15.580	15.580
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			434.130	40.189		26.462		34.052		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

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**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 52)





# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			E0556 EW Counter Response						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Testing - ICAP III	WX	NAWCAD, PAX	3.000	3.000	11/02	2.522	11/03				8.522	
											0.000	
											0.000	
Developmental Testing - Mission Planning	WX	NAWCWD, PT MUGU		0.100	12/02	0.100	12/03	0.100	12/04		0.300	
		NAWCAD, PAX		0.100	12/02	0.100	12/03	0.100	12/04		0.300	
Developmental Testing - LBT	WX	NAWCAD, PAX	3.000	0.976	10/03						3.976	
Developmental Testing - Spray Cool	WX	NAWCWD, PT MUGU	1.306								1.306	
Operational Test & Eval: Mission Planning	WX	OPTEVFOR, Norfolk, VA		0.100	12/02	0.100	12/03	0.100	12/04			
Operational Test & Eval: ICAP III	WX	OPTEVFOR, Norfolk, VA	5.146	3.250	11/02	3.360	11/03					
Operational Test & Eval: LBT	WX	OPTEVFOR, Norfolk, VA		1.000	11/02							
Subtotal T&E			12.452	8.526		6.182		0.300		Continuing	Continuing	
Remarks: Funding is required to conduct ICAP III and LBT developmental/operational assessment planning, execution, and reporting.												
											0.000	
Government Eng Supt - Mission Planning	WX	NAWCWD, PT MUGU		0.100	12/02	0.100	12/03	0.100	02/05		0.300	
											0.000	
Program Mgmt Supt - Spray Cool	WX	NAWCAD, PAX	1.306								1.306	
											0.000	
											0.000	
Subtotal Management			1.306	0.100		0.100		0.100		Continuing	Continuing	
Remarks:												
Total Cost			486.944	52.615		36.644		38.452		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development								PROJECT NUMBER AND NAME E0556 EW Counter Response																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones LBT</b>																																
<b>LBT</b>																																
<b>Acquisition Milestones ICAP III</b>																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test/OT																																
Operational Test																																
<b>Production Milestones LBT</b>																																
LRIP Start - FY04																																
FRP Start - FY05																																
ICAP III																																
LRIP Award - FY03																																
FRP Award - FY04																																
<b>Deliveries</b>																																

R-1 SHOPPING LIST - Item No. 102

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

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	28.136*	13.063**	13.639					
RDT&E Articles Qty	Not Applicable							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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.

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.

AN/ALE-50 ADVANCED AIRBORNE EXPENDABLE DECOY (AAED): This Joint Service (with Air Force) subproject developed the system to decoy enemy radio frequency homing missiles away from friendly aircraft.

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.

\* The FY 2002 budget reflects a \$2.5M Congressional add for IDECM, project E2635 which has been revised by -\$22K for Congressional Undistributed Adjustments and -\$65K for Small Business Innovative Research and -\$7K for economic assumptions.

\*\* The FY 2003 budget reflects a \$7.6M Congressional add for IDECM, project E2635 which has been revised by -\$87 for Congressional Undistributed Adjustments and -\$81K for economic assumptions.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	28.136	13.063	13.639	
RDT&E Articles Quantity				

Fund engineering and manufacturing (E&MD) contract and engineering, technical and logistic support. Fund A-Kit Block 2 efforts for integration of the Radio Frequency Countermeasure (RFCM) subsystem into the F/A-18 E/F.

Fund Block 3 efforts for integration of the RFCM subsystem into the F/A-18 E/F. Fund Block 2 Operational Evaluation (OPEVAL) and Milestone III decision for RFCM.

Fund E&MD contract and engineering, technical and logistic support. Fund A-Kit Block 3 efforts for integration of the RFCM subsystem into the F/A-18 E/F. Fund Block 3 Combined Developmental Testing and Operational Testing (CDT/OT). Fund Block 3 OPEVAL and Milestone III decision.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	27.886	5.758	5.929	
Current BES/President's Budget	28.136	13.063	13.639	
Total Adjustments	0.250	7.305	7.710	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.078		
Congressional rescissions	-0.059			
SBIR/STTR Transfer	-0.827			
Economic Assumptions	-0.074	-0.217	-0.337	
Reprogrammings	1.709			
Other Adjustments	-0.499		8.047	
Congressional increases		7.600		
Subtotal	0.250	7.305	7.710	0.000

Schedule:

- LRIP II moved from FY2002, 1st Qtr to FY2002, 2nd Qtr due to schedule restructuring.
- Block 2 OPEVAL moved from FY2002, 3rd Qtr to FY2003, 1st Qtr due to schedule restructuring.
- Block 2 FRP moved from FY2003, 1st Qtr to FY2004, 2nd Qtr due to schedule restructuring.
- Block 3 OPEVAL moved from FY2004, 1st Qtr to FY2005, 1st Qtr due to schedule restructuring.
- Block 3 FRP moved from FY2005, 1st Qtr to FY 2007, 1st Qtr due to schedule restructuring.

Technical:

Not Applicable.

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-5 Line 51 Common ECM (OSIP 007-03 - IDECM)	0	4.3	12	36.5	49.5	40.4	41	41.7	435	660.4
<b>E. ACQUISITION STRATEGY:</b>										
IDECM sole source LRIP 1/2/3 in FY 01, 02, and 03; sole source radio frequency countermeasure full rate production (FRP) in FY 03 and Fiber optic towed decoy sole source FRP in FY 05.										

R-1 SHOPPING LIST - Item No. 102







**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E2175 TACAIR EW & E2635 IDECM					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ENGINEERING/LOGISTIC/SPT	WX/RX	NAWC-AD/PAX	25.047	1.004	03/03	2.438	11/03				28.489	
ENGINEERINGTECH DATA	WX/RX	NAWC-WD, CA	36.452			0.350	12/03				36.802	
Miscellaneous (efforts < \$m each)	WX/RX	Various	1.608			0.395	01/04				2.003	
Test Support	WX/RX	OPTEVFOR	1.500	1.108	01/03	0.250	12/03				2.858	
Subtotal T&E			64.607	2.112		3.433					70.152	
Remarks:												
Program Management Support	WX/RX	NAWC-AD/PAX/Various	21.384	0.664	03/03	0.560	11/03				22.608	
Miscellaneous (efforts < \$m each)	WX/RX	Various	6.561								6.561	
Subtotal Management			27.945	0.664		0.560					29.169	
Remarks:												
Total Cost			461.238	13.063		13.639					487.940	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>										
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																		
<b>RDT&amp;E, N / BA-5</b>				0604270N Electronic Warfare Development												E2175 TACAIR EW & E2685 IDECM																		
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Acquisition Milestones</b>							MS III △ 1B-2				IOC ★ 1B-2											MS III △ 1B-3												
IB-3 Development			▲	▲		LAB △			SAFE SEP △	CVS △																								
Software	REDACTED																																	
<b>Test &amp; Evaluation Milestones</b>																																		
IB-2			▲	△		COMBINED			OT RPT △																									
IB-2 OPEVAL				△																														
IB-3 Development							DT △			CDT/OT △			OPEVAL △			OTRPT △																		
<b>Production Milestones</b>																																		
IB-2		LRIP 2 ▲					LRIP 3 △			FRP 1 △			FRP 2 △			FRP 3 △						FRP 4 △						FRP 5 △				FRP 6 △		
IB-3 Development										LRIP 1 △			FRP 1 △			FRP 2 △						FRP 3 △						FRP 4 △				FRP 5 △		
Deliveries							LRIP 1 (6/30)			LRIP 2 (14/0)			LRIP 3 (20/0)									FRP											Lot 24 (36)	

R-1 SHOPPING LIST - Item No. 102

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

## UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E3063 AEA Follow On			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>5.000</b>	<b>9.780</b>	<b>204.822</b>	<b>350.768</b>	<b>394.280</b>	<b>299.110</b>	<b>224.673</b>	
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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

The EA-18G is designed to replace the EA-6B aircraft. The EA-18G's electronic attack upgrades will meet or exceed EA-6B (with LR-700, ALQ-99, USQ-113) Airborne Electronic Attack (AEA) capability to detect, identify, locate and suppress hostile emitters; provide enhanced connectivity to National, Theater and strike assets; and provide organic precision emitter targeting for employment of onboard suppression weapons (HARM) to fulfill operational requirements. The EA-18G will have the capability to operate autonomously or as a major node in a network centric operation. The performance of the aircraft is compatible with the primary strike/fighter aircraft projected to be in the inventory in the 2010 time period, allowing it to be fully integrated into specific strike packages. It will also have the capacity to provide broad area coverage for extended periods of time to support numerous strikes or other air operations in a federated context. The EA-18G is a scaleable, flexible solution that facilitates "Task Organized" force structures. The task organized force structures employ adequate forces to accomplish a specific task while maintaining the operation and personnel tempo at acceptable levels. The EA-18G is being designed to perform a range of Electronic Warfare/Electronic Attack functions either simultaneously or independently. The man in the loop operation and advanced information display system will allow real time assessment of the tactical situation and the appropriate response executed in accordance with the rules of engagement.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E3063 AEA Follow On

**B. Accomplishments/Planned Program**

AEA Follow On	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.000	9.780		
RDT&E Articles Quantity				

- (U) Funding is Pre-SDD contract activity which will prepare the necessary documentation and requirements to enter the SDD phase in FY 2004. Examples of work currently being performed are: detailed weapon system-level specification, SDD ground and flight test plan, software requirements.

AEA Follow On	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			204.822	350.768
RDT&E Articles Quantity				

- (U) Funding is for SDD contract activity: Air Vehicle Design and Integration, Avionics Development, and Software Development of the EA-18G.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E3063 AEA Follow On			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:				9.880	100.164
Current BES/President's Budget		5.000	9.780	204.822	350.768
Total Adjustments		5.000	9.780	194.942	250.604
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.058		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.162	-4.955	-7.880
Reprogrammings					
Other Adjustments				199.513	258.484
Congressional increases		5.000	10.000		
Subtotal		5.000	9.780	194.558	250.604
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E3063 AEA Follow On				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN-1 (G)				8.243	297.834	862.052	1,392.590	1,463.417	2,517.277	6,541.413
<b>E. ACQUISITION STRATEGY:</b>										
<p>- Development of EA-18G will be based on the findings of an OSD sponsored Analysis of Alternatives and a Navy sponsored Refinement of Alternatives study. It is anticipated that a sole source award for the EA-18G SDD contract will be given to the platform manufacturer. The contract will be structured to minimize the Navy's up-front investment and cancellation penalty while reducing costs for the total program life cycle. The Cost Plus Incentive Fee / Award Fee (CPIF/AF) contract arrangement provides incentive based on cost. The arrangement provides an incentive to the contractor to meet all performance requirements on cost and schedule.</p>										

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			E3063 AEA Follow On						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Develop(SDD)	CPIF/AF	Boeing, St Loius, MO				177.817	10/03	292.978	10/04	743.633	1,214.428	1,224.208
Primary Hardware Develop(Pre-SDD)	CPIF/AF	Boeing, St Loius, MO	3.100	7.100	03/03						10.200	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			3.100	7.100		177.817		292.978		743.633	1,224.628	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			E3063 AEA Follow On						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Government Engineering Support			1.900	2.680	06/03	27.005	11/03	57.790	11/04	174.430	263.805	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.900	2.680		27.005		57.790		174.430	263.805	
Remarks:												
Total Cost			5.000	9.780		204.822		350.768		918.063	1,488.433	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 27 of 52)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																	DATE: <b>February 2003</b>															
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>						PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development						PROJECT NUMBER AND NAME E3063 AEA Follow On																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>								MS B ▲																								IOC ★
Pre SDD Phase					Pre SDD				SDD																							
EA6B Follow on Development								SRR ▲	SDR ▲				FDR ▲	SFDR ▲																		
EA6B Follow on Full System Delivery								Lab	Flt Rel								EA-1 ▲ 1	EA 2 ▲ 2														
Software Development					Software Requirements Dev				Test System/Software Dev				Fleet Release Software Dev																			
<b>Test &amp; Evaluation Milestones</b>									Development Test																OT-IIC OPEVAL							
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
LRIP I FY 06																																
LRIP II FY 07																																
FRP FY 08																																
Deliveries																																

FRP Dec

R-1 SHOPPING LIST - Item No. 102

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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E3063 AEA Follow On			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Pre Systems Demonstation & Development Phase		1Q-4Q						
Software Requirements Development		1Q - 4Q	1Q					
Test System/Software Development		2Q - 4Q	1Q - 4Q	1Q				
Fleet Release Software Development		4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q
Milestone B			1Q					
Systems Design Review (SDR)			3Q					
Systems Demonstration & Development			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Software Specification Review (SSR)			1Q					
Developmental Testing (DT-II)			1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q
Systems Functional Design Review (SFDR)				3Q-4Q				
Functional Design Review (FDR)				2Q				
Start Low-Rate Initial Production I					1Q			
Start Low-Rate Initial Production II						1Q		
Operational Testing (OT-IIB)					3Q	1Q-2Q		
Developmental Testing (DT-IIC)					4Q	1Q-2Q		
Follow On Full System Delivery LOT 1					4Q			
Follow On Full System Delivery LOT 2						2Q		
Low-Rate Initial Production II Delivery							1Q - 4Q	
Full Rate Production Start							1Q	
Operational Testing (OT-IIC)								1Q - 4Q
Lot Rate Initial Production III Delivery								1Q - 4Q
IOC								4Q
Full Rate Production (FRP) Decision								4Q

R-1 SHOPPING LIST - Item No. 102

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 29 of 52)

<b>CLASSIFICATION: UNCLASSIFIED</b>										
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME R2260 Specific Emitter ID				
COST (\$ in Millions)			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost			0.965	0.996	0.764	0.827	0.826	0.975	0.000	0.000
RDT&E Articles Qty										
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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>										

R-1 SHOPPING LIST - Item No. 102

Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 30 of 52)

UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME R2260 Specific Emitter ID

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.570	0.508	0.200	0.000
RDT&E Articles Quantity				

This effort supports systems development and information fusion of improved SEI technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Work was performed on increasing sensor fusion and automation to reduce staffing and support remote access and control capability. In FY 03 this effort will demonstrate the sensor fusion and automation aspects of SEI systems to reduce staffing and support remote access and control capability. In FY 04 this effort will support the deployment and real world tuning of highly automated SEI systems with sensor fusion, achieving goals of increased performance and reduced staffing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.395	0.488	0.350	0.327
RDT&E Articles Quantity				

This effort supports development of a autonomous surveillance system capable of providing emitter signal information to a central location. Work was begun on this effort in FY02. In FY03 a demonstration of a complete autonomous emitter signal surveillance system consisting of central base station and one or more remote sensor sites will be performed. In FY 04 & FY 05, this effort will support the deployment and real world tuning of an autonomous emitter signal surveillance system and monitor base station and remote site operations.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.214	0.500
RDT&E Articles Quantity				

Improved SEI system performance, real-time communication and tactical use of SEI will be expanded with next generation SEI technology. In FY 04, this effort will develop and demonstrate enhanced system support for real-time communication and tactical use of SEI and other signal data. In FY 05, this effort will improve and deploy enhanced system support for real-time communication and tactical use of SEI and other signal data.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME R2260 Specific Emitter ID			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		1.003	1.019	1.017	1.016
Current BES/President's Budget		0.965	0.996	0.764	0.827
Total Adjustments		-0.038	-0.023	-0.253	-0.189
Summary of Adjustments					
Congressional program reductions		-0.002	-0.002		
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer		-0.013			
Economic Assumptions		-0.003	-0.006		
Reprogrammings		-0.020			
Other Adjustments		0.000	-0.015	-0.253	-0.189
Congressional increases					
Subtotal		-0.038	-0.023	-0.253	-0.189
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME R2260 Specific Emitter ID					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
None										
<b>(U) E. ACQUISITION STRATEGY:</b>										
This is a non-acquisition Research and Development Program.										

R-1 SHOPPING LIST - Item No. 102

**UNCLASSIFIED**



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development				R2260 Specific Emitter ID					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	ITT, Virginia		0.200	02/03	0.324	02/04	0.150	02/05	0.300	0.974	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
*Prior Years Funding Total	N/A		8.558								8.558	
Subtotal Product Development			8.558	0.200		0.324		0.150		0.300	9.532	
Remarks:												
Development Support											0.000	
Software Development	WR	NRL, Washington, DC		0.200	10/02	0.090	10/03	0.230	10/04	0.500	1.020	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.200		0.090		0.230		0.500	1.020	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development				R2260 Specific Emitter ID					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NRL, Washington, DC		0.200	10/02	0.050	10/03	0.100	10/04	0.229	0.579	
Developmental Test & Evaluation	C/FFP	CACI, Virginia		0.150	03/03	0.075	03/04				0.225	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.350		0.125		0.100		0.229	0.804	
Remarks:												
Contractor Engineering Support	C/FFP	AIMS, Maryland		0.146	03/03	0.150	03/04	0.150	03/05	0.400	0.846	
Government Engineering Support	WR	NRL, Washington, DC		0.100	10/02	0.075	10/03	0.197	10/04	0.419	0.791	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.246		0.225		0.347		0.819	1.637	
Remarks:												
Total Cost			8.558	0.996		0.764		0.827		1.848	12.993	
Remarks:												





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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME X2422 LOCO GPSI			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>3.756</b>	<b>2.054</b>						
RDT&E Articles Qty	Not Applicable							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The Global Positioning System (GPS) is an integral part of virtually every warfighting capability from navigation to asset tracking to precision weapons. However, this very weak signal is susceptible to interference and jamming. GPS Interference Situational Awareness (GISA) will provide operational forces with knowledge of threats to GPS as part of Intelligence Preparation of the Battlespace and in support of Time Critical Targeting. Operational forces would be able to plan and/or modify existing plans based on the threat and own force capabilities (GPS protection such as anti-jam antennas). The Electronic Support Annex to GPS I/II/III ORD (AFSPC/ACC 003-92) outlines requirements for GPS interference and jammer detection and is scheduled for JROC review in late-summer/early-fall 2002.

The National Security Agency (NSA) may now take over the requirements of the ES ORD Annex. This has delayed the formalizing of requirements.

The Location Of GPS Interferers (LOCO GPSI) is a Congressional Add project managed for the Government by SPAWAR Systems Center, San Diego. FALON, Incorporated is the system developer. This project is developing a prototype system to detect, identify, and geo-locate GPS jammers and interference sources. The system uses phase interferometry to determine accurate emitter angle of arrival then passive ranging algorithms to derive accurate emitter position. The current prototype system completed flight demonstration, and FY02 objective is to miniaturize the system to achieve an operationally suitable form factor compatible with unmanned air/ground vehicles as well as tactical pod, pylon, and large vehicle/aircraft integration. This UAV configuration is called the Mini Lite configuration. The FY03 objective is to complete the evaluation of the LOCO GPSI Mini Lite System through ground and flight tests, conduct JGPSCE-Charlie flight tests, develop a second system, and plan and coordinate with potential sponsors to tailor CONOPS for specific applications

LOCO GPSI represents the most mature technology with a focused capability against the GPS threat and is a complementary capability to existing SIGINT systems that would require system modification (with impact to their primary mission area) to achieve some similar capability.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME X2422 LOCO GPSI

**B. Accomplishments/Planned Program**

LOCO GPSI	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.756	2.054		
RDT&E Articles Quantity				

**(U) FY02 ACCOMPLISHMENTS:**

LOCO GPSI FY02 primary effort is to miniaturize the current prototype from slightly over 60 pounds to under 10 pounds and reduce form factor to be compatible with the full spectrum of candidate platforms from UAV to large aircraft. Flight demonstration data have been evaluated, the test report has been completed, and demonstration results presented to the Naval Air and Strike Warfare Center who provided the aircraft and test range for the flight demonstration. Lessons learned from the preliminary lab and ground testing as well as the flight demonstration have been incorporated in the current prototype design as well as in the miniaturized system design. A Preliminary Design Review was successfully completed on 31 July. Concepts of operation have been developed and are being refined through socialization with fleet and operational units. Preparations are continuing for LOCO GPSI participation, funding permitting, in the Coalition Combat Identification (CCID) Advanced Concept Technology Demonstration scheduled for 2004. A GPS Interference Situational Awareness (GISA) ACTD is also being investigated, as are candidate operational host platforms for flight demonstration of the LOCO GPSI miniaturized prototype and potential participation in the Joint GPS Combat Effectiveness test in 2003.

**(U) FY03 PLAN:**

In FY03 the Mini Lite unit will then be calibrated in an F/A-18 airframe mounted on a pedestal at the NAWC-AD (Patuxant River) outdoor antenna range. In order to provide a comparison of the Mini Lite system performance and that of the legacy LOCO GPSI system, the legacy (with upgrades) system will be recalibrated at the antenna range as well. Both units will then undergo flight demonstration testing at NSAWC (Fallon, NV) on separate aircraft flying similar flight profiles. Following the flight demonstration testing and any refurbishment of the systems, the unit will support JGPSCE-Charlie flight exercises at White Sands Missile Range. The Mini Lite system will be the primary unit for testing, the legacy system will serve as the backup. Data from the exercise will support the operational assessment of the LOCO GPSI system. Data from multiple flights will be collected and analyzed. The LOCO GPSI development team will also develop and laboratory test a second LOCO GPSI Mini Lite system identical to the first unit to serve as a backup for future testing or limited quick reaction capability support in the field. Components will be selected, procured, and integrated to meet product goals. FY03 efforts will also continue to refine and/or coordinate CONOPS for the LOCO GPSI system. This will involve planning sessions and technical interchanges with potential sponsors or experiment/exercise venue representatives. This may involve modeling and simulation efforts to explore LOCO GPSI operational utility in robust combat environments. This will form the foundation for a LOCO GPSI ACTD submitted for FY04 and tentatively sponsored by EUCOM pending lead service determination.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME X2422 LOCO GPSI			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		3.800	0.000		
Current BES/President's Budget		3.756	2.054		
Total Adjustments		-0.044	2.054	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions		-0.034	-0.012		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions		-0.010	-0.012		
Reprogrammings					
Other Adjustments			-0.022		
Congressional increases			2.100		
Subtotal		-0.044	2.054		
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 102

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME X2422 LOCO GPSI
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										

**E. ACQUISITION STRATEGY:**

Not Applicable



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			X2422 LOCO GPSI						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	SPAWAR	3.756	2.054	06/03						5.810	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			3.756	2.054		0.000		0.000		0.000	5.810	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
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: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5?</b>			0604270N Electronic Warfare Development			X2422 LOCO GPSI						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			3.756	2.054		0.000		0.000		0.000	5.810	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED





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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME Z1742 EW Technical Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.971</b>	<b>1.035</b>	<b>0.832</b>	<b>0.917</b>	<b>0.945</b>	<b>1.141</b>	<b>1.163</b>	<b>1.184</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Skunkworks is a CNO N614 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 successful mission accomplishment.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME Z1742 EW Technical Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.300	0.000	0.000	0.000
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

- (U) Completed airborne IW pod test and certification.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.400	0.400	0.400	0.400
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

- (U) Continue heliborne IW jammer development, test and evaluation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.200	0.200	0.200	0.200
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

- (U) Continue unmanned aerial vehicle IW payload test and development

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME Z1742 EW Technical Development

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.071	0.435	0.232	0.317
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

- (U) Continue aircraft IW system design.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME Z1742 EW Technical Development			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.997	1.058	1.081	1.119
Current BES/President's Budget		0.971	1.035	0.832	0.917
Total Adjustments		-0.026	-0.023	-0.249	-0.202
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions		-0.011			
Congressional rescissions		-0.014		-0.081	-0.119
SBIR/STTR Transfer		-0.001			
Economic Assumptions			-0.012	-0.060	-0.063
Reprogrammings					
Inflation Savings			-0.011	-0.108	-0.020
Subtotal		-0.026	-0.023	-0.249	-0.202
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME Z1742 EW Technical Development					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY:</b>										
Not Applicable										

R-1 SHOPPING LIST - Item No. 102

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			Z1742 EW Technical Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Var	Var	0.918	0.475	Var	0.300	Var	0.380	Var	0.400	2.473	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.918	0.475		0.300		0.380		0.400	2.473	
Remarks:												
Development Support											0.000	
Software Development	Var	Var	0.406	0.100	Var	0.100	Var	0.100	Var	0.110	0.816	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.406	0.100		0.100		0.100		0.110	0.816	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604270N Electronic Warfare Development			Z1742 EW Technical Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Var	Var	0.700	0.210	Var	0.200	Var	0.200	Var	0.200	1.510	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.700	0.210		0.200		0.200		0.200	1.510	
Remarks:												
Contractor Engineering Support	Var	Var	0.300	0.138	Var	0.120	Var	0.120	Var	0.120	0.798	
Government Engineering Support	Var	Var	0.300	0.112	Var	0.112	Var	0.117	Var	0.115	0.756	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.600	0.250		0.232		0.237		0.235	1.554	
Remarks:												
Total Cost			2.624	1.035		0.832		0.917		0.945	6.353	
Remarks:												

R-1 SHOPPING LIST - Item No. 102

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 52 of 52)

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604273N VHXX EXECUTIVE HELO DEVELOPMENT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>0.698</b>	<b>3.391</b>	<b>197.431</b>	<b>199.577</b>	<b>249.961</b>	<b>282.342</b>	<b>323.492</b>	<b>327.389</b>
H3058 VHXX Replacement	<b>0.698</b>	<b>3.391</b>	<b>197.431</b>	<b>199.577</b>	<b>249.961</b>	<b>282.342</b>	<b>323.492</b>	<b>327.389</b>

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**  
 THE VHXX program provides the replacement for the VH-3D Presidential helicopter. 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.

\* New program element for effort previously included (FY02 - FY03) in Program Element 0604212N, ASW and Other Helo Development; Project number H3058, VHXX Replacement.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT			PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.698*	3.391*	197.431	199.577	249.961	282.342	323.492	327.389
RDT&E Articles Qty			4	1				

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** 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.

\* New program element for effort previously included (FY02 - FY03) in Program Element 0604212N, ASW and Other Helo Development; Project number H3058, VHXX Replacement.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.698	0.000	0.000	0.000
RDT&E Articles Quantity				

Awarded contract for an Analysis of Alternatives.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.440	0.000	0.000
RDT&E Articles Quantity				

A Requirements Analysis, and Functional Analysis and Allocation will be contracted for VHXX Replacement utilizing existing an NAVAIR contractual vehicle.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.350	0.000	0.000
RDT&E Articles Quantity				

Trade Study to develop Systems Requirements Analysis

R-1 SHOPPING LIST - Item No. 103

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT		
<b>B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.199	28.237	30.245
RDT&E Articles Quantity				
<p>In-house field activity support of Integrated Product Teams (IPTs), 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&amp;M) does not allow these functions to be accomplished sequentially. Efforts include, but are not limited to, government development support, integrated logistics support, engineering support, program management support, systems engineering support, and travel for VHXX program.</p>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	153.875	151.893
RDT&E Articles Quantity			4	1
<p>Contract award for intial COTS aircraft and EDM assets.</p>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.402	0.000	0.000
RDT&E Articles Quantity				
<p>Multiple contract awards for VHXX Alternative Design Concepts. Effort to combine the current programs to replace the 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.</p>				

R-1 SHOPPING LIST - Item No. 103

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	15.319	17.439
RDT&E Articles Quantity				

Test and Evaluation of COTS aircraft and EMD assets.

R-1 SHOPPING LIST - Item No. 103



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT	PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	1.989	4.079	45.670
Current BES/President's Budget	0.698	3.391	197.431	199.577
Total Adjustments	0.698	1.402	193.352	153.907

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.058		
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-0.002	-0.040	-4.564	-4.318
Reprogrammings	0.700			
Other Navy/OSD adjustments		1.500	197.916	158.225
Congressional increases				
Subtotal	0.698	1.402	193.352	153.907

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 103

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT			PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY:</b>										
Although not yet formally designated, it is assumed that the VH-XX will be designated an ACAT I program. An Analysis of Alternatives will be completed in FY03. There will be a competitive award of a Trade Study to determine which competing technology is the most appropriate to satisfy the Executive Vertical Lift requirement. Selection of VH-XX concept and approval will occur at a Milestone Decision Review in FY2004.										

R-1 SHOPPING LIST - Item No. 103

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604273N VHXX EXECUTIVE HELO DEVELOPMENT				H3058 VHXX REPLACEMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD				153.875	01/04	151.893	01/05	Continuing	Continuing	
Ancillary Hardware Development	TBD	TBD								Continuing	Continuing	
Aircraft Integration	TBD	TBD								Continuing	Continuing	
Ship Integration										Continuing	Continuing	
Ship Suitability										Continuing	Continuing	
Systems Engineering	TBD	TBD		0.645	03/03	5.384	01/04	5.762	01/05	Continuing	Continuing	
Training Development	TBD	TBD								Continuing	Continuing	
Licenses										Continuing	Continuing	
Tooling										Continuing	Continuing	
GFE	TBD	TBD								Continuing	Continuing	
Award Fees										Continuing	Continuing	
<b>Subtotal Product Development</b>			0.000	0.645		159.259		157.655		Continuing	Continuing	
Remarks: TBD Contracts not awarded.												
Development Support	Various	NAWCAD Pax River, MD		0.415	03/03	2.331	01/04	2.687	01/05	Continuing	Continuing	
Software Development	Various	Various								Continuing	Continuing	
Integrated Logistics Support	Various	Various		0.415	01/03	3.345	01/04	3.761	01/05	Continuing	Continuing	
Configuration Management	TBD	TBD								Continuing	Continuing	
Technical Data	TBD	TBD								Continuing	Continuing	
Studies & Analyses	Various	Various	0.698	1.402	02/03					Continuing	Continuing	
GFE										Continuing	Continuing	
Award Fees										Continuing	Continuing	
<b>Subtotal Support</b>			0.698	2.232		5.676		6.448		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 103

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 11)

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604273N VHXX EXECUTIVE HELO DEVELOPMENT				H3058 VHXX REPLACEMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX/RX	NAWCAD Pax River, MD				15.319	01/04	17.439	01/05	Continuing	Continuing	
Operational Test & Evaluation	WX/RX	COMOPTEVFOR (HMX)								Continuing	Continuing	
Live Fire Test & Evaluation	Various	Various								Continuing	Continuing	
Test Assets	Various	Various								Continuing	Continuing	
Tooling	Various	Various								Continuing	Continuing	
GFE	Various	Various								Continuing	Continuing	
Award Fees										Continuing	Continuing	
Subtotal T&E			0.000	0.000		15.319		17.439		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various								Continuing	Continuing	
Government Engineering Support	Various	Various				11.452	11/03	11.741	11/04	Continuing	Continuing	
Program Management Support	Various	Various		0.455	01/03	5.421	11/03	5.872	11/04	Continuing	Continuing	
Travel	WX	NAWCAD Pax River, MD		0.059	11/03	0.304	11/03	0.422	11/04	Continuing	Continuing	
Transportation										Continuing	Continuing	
SBIR Assessment										Continuing	Continuing	
Subtotal Management			0.000	0.514		17.177		18.035		Continuing	Continuing	
Remarks:												
Total Cost			0.698	3.391		197.431		199.577		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 103

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604273N VHXX EXECUTIVE HELO DEVELOPMENT								PROJECT NUMBER AND NAME H3058 VHXX REPLACEMENT																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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
Analysis of Alternatives																																
Contract Preparation																																
Trade Studies & Analysis																																
RFP																																
Evaluation of Contractors																																
Contract Award																																
Incorporate design																																
Test Program (ET/DT/OA)																																
Block 1																																
Tech Eval/Op Eval/ECO																																
IOC																																
Block 2 Design																																
Block 2 LRIP I																																
Block 2 LRIP II																																
Block 2 DT/OT																																
FRP/IOC																																
Block 2 Lot II																																
Block 2 Lot II																																
Block 2 Lot III																																
FOC																																

R-1 SHOPPING LIST - Item No. 103

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	0.000	0.000	19.913	87.943	84.140	57.697	11.037	9.699	7.057	Continuing	Continuing
X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)	0.000	0.000	19.913	72.943	61.140	45.697	11.037	9.699	7.057	Continuing	Continuing
X3073 Multi-functional Information Distribution System (MIDS)	0.000	0.000	0.000	15.000	23.000	12.000	0.000	0.000	0.000	0.000	50.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
<p>The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable tactical communications. 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 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 system that will meet both narrowband and wideband requirements in the 2 MHz to 2 GHz frequency spectrum. The new JTRS-M/F Block II system will replace a multitude of systems (HFRG, DWTS, SINCGARS, UHF SATCOM, etc.) and will form the foundation of the Common Surface Ship and Submarine Radio Room replacing all legacy tactical radios in the 2 MHz to 2 GHz frequency spectrum.</p> <p>The MIDS-LVT is a jam-resistant, secure, digital (voice and data) information distribution system, enabling rapid integrated communications, navigation and identification for tactical and command and control operations. The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINCGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT. MIDS SCA upgrade effort begins in FY04 (\$15M), will continue in FY05 (\$23M), and will be completed in FY06 (\$12M).</p> <p>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. 104

# UNCLASSIFIED

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 1 of 12)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total Project Cost	0.000	0.000	19.913	87.943	84.140	57.697	11.037	9.699	7.057	Continuing	Continuing
X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)	0.000	0.000	19.913	72.943	61.140	45.697	11.037	9.699	7.057	Continuing	Continuing
X3073 Multi-functional Information Distribution System (MIDS)	0.000	0.000	0.000	15.000	23.000	12.000	0.000	0.000	0.000	0.000	50.000
RDT&E Articles Qty											0

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

The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable tactical communications. 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 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 system that will meet both narrowband and wideband requirements in the 2 MHz to 2 GHz frequency spectrum. The new JTRS-M/F Block II system will replace a multitude of systems (HFRG, DWTS, SINCGARS, UHF SATCOM, etc.) and will form the foundation of the Common Surface Ship and Submarine Radio Room replacing all legacy tactical radios in the 2 MHz to 2 GHz frequency spectrum.

The MIDS-LVT is a jam-resistant, secure, digital (voice and data) information distribution system, enabling rapid integrated communications, navigation and identification for tactical and command and control operations. The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINCGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT. MIDS SCA upgrade effort begins in FY04 (\$15M), will continue in FY05 (\$23M), and will be completed in FY06 (\$12M).



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N    TITLE: JOINT TACTICAL RADIO SYSTEM	PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
JTRS-M/F Block I	0.000	14.294	10.833	4.065
RDT&E Articles Quantity				

**FY02:** See Program Element 0303109N, Project Number X0731, Digital Modular Radio (DMR).

**FY03:** Conduct Operational Test for DMR (\$444). Continue modification of DMR to be compliant with JTRS software architecture. The modified DMR will be renamed as JTRS-M/F Block I (\$13,850).

**FY04:** Complete modification of DMR to be compliant with JTRS software architecture. The modified DMR will be renamed as JTRS-M/F Block 1 (\$5,801). Begin porting (integration) of JTRS Joint Program Office (JPO) provided waveforms to JTRS-M/F Block 1 radio (\$2,857). Test and evaluation (IOT&E) of JTRS-M/F Block 1 (\$1,190). JTRS-M/F Block 1 developmental engineering and management support (\$985).

**FY05:** Continue porting JTRS Joint Program Office (JPO) provided waveforms to Block I radio (\$2,857). Follow-on Test and Evaluation (FOT&E) of JTRS-MF Block I (\$1,208).

	FY 02	FY 03	FY 04	FY 05
JTRS-M/F Block II	0.000	5.619	62.110	57.075
RDT&E Articles Quantity				

**FY02:** See Program Element 0303109N, Project Number X0731, Digital Modular Radio (DMR).

**FY03:** Complete development of contract package for JTRS-M/F Block II as the follow-on to JTRS-M/F Block I, release Request for Proposal (RFP) (\$5,619).

**FY04:** JTRS-M/F Block II System Development and Demonstration Phase contract award to one or more vendor teams for development of a JTRS Maritime and Fixed Site System covering 2 MHz - 2GHz that meets Joint Service Requirements. Development is estimated at 3 years and is expected to continue through FY06. The new system will be comprised of 3 integrated subsystems; a JTR radio set subsystem, an automated RF distribution subsystem, and a dynamic connectivity resource control sub system. Each vendor team will be required to develop and deliver 3 Engineering Development Models (EMD's) built off common building blocks and scaled to meet the requirements of a small, medium and large surface ship platform (\$57,598). JTRS-MF Block II developmental engineering and management support (\$4,512).

**FY05:** Continue JTRS-M/F Block II System Development and Demonstration Phase as described in FY 2004 plan (\$52,438). JTRS-M/F Block II development engineering and management support (\$4,637) .

R-1 SHOPPING LIST - Item No. 104

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
MIDS	0.000	0.000	15.000	23.000
RDT&E Articles Quantity				

**FY04:** MIDS SCA upgrade effort begins in FY04 (\$15M). The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINGGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT.

**FY05:** Continue MIDS SCA upgrade to JTRS compliance (\$23M). MIDS SCA conversion will be completed in FY06.

R-1 SHOPPING LIST - Item No. 104

**UNCLASSIFIED**

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>																																																								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)																																																									
<p><b>(U) C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 40%;">(U) Funding:</th> <th style="text-align: right; width: 15%;">FY 2002</th> <th style="text-align: right; width: 15%;">FY 2003</th> <th style="text-align: right; width: 15%;">FY 2004</th> <th style="text-align: right; width: 15%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">20.373</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">19.913</td> <td style="text-align: right;">87.943</td> <td style="text-align: right;">84.140</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">-0.460</td> <td></td> <td></td> </tr> <tr> <td colspan="5" style="padding: 10px 0 0 40px;">Summary of Adjustments</td> </tr> <tr> <td style="padding-left: 20px;">Issue 67290 Business Process Reform</td> <td></td> <td style="text-align: right; color: red;">-0.081</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Issue 67291 Econ Assumptions (SEC 8135)</td> <td></td> <td style="text-align: right; color: red;">-0.114</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Issue 67446 IT Cost Growth</td> <td></td> <td style="text-align: right; color: red;">-0.037</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Issue 69222 FY03 FFRDC reduction</td> <td></td> <td style="text-align: right; color: red;">-0.012</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Issue 69976 Inflation Savings</td> <td></td> <td style="text-align: right; color: red;">-0.216</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">-0.460</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule: No Changes</p> <p style="margin-top: 20px;">(U) Technical: No Changes</p>					(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005	President's Budget:	0.000	20.373	0.000	0.000	Current BES/President's Budget	0.000	19.913	87.943	84.140	Total Adjustments	0.000	-0.460			Summary of Adjustments					Issue 67290 Business Process Reform		-0.081			Issue 67291 Econ Assumptions (SEC 8135)		-0.114			Issue 67446 IT Cost Growth		-0.037			Issue 69222 FY03 FFRDC reduction		-0.012			Issue 69976 Inflation Savings		-0.216			Subtotal	0.000	-0.460	0.000	0.000
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																																							
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Issue 69976 Inflation Savings		-0.216																																																									
Subtotal	0.000	-0.460	0.000	0.000																																																							

R-1 SHOPPING LIST - Item No. 104

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3010 - Ship Tactical Communications - JTRS	0.000	0.000	25.954	40.578	127.169	123.214	112.711	117.355	Continuing	Continuing
3215 - Satellite Communications Systems - DMR	5.035	2.038	0.000	0.000	0.000	0.000	0.000	0.000		

**(U) E. ACQUISITION STRATEGY:**

	FY 2002	FY 2003	FY 2004	FY 2005
Program Milestones: N/A				
JTRS-M/F Block I			3rd Qtr Complete JTRS Transition	1st Qtr Full Rate Production Decision Review
JTRS-M/F Block II			3Q RFP Release 4Q Milestone B	1st Qtr Contract Award
T&E Milestones:				
JTRS-M/F Block I				3rd & 4th Qtr DT/OT
JTRS-M/F Block II: N/A				

**(U) F. MAJOR PERFORMERS:**

FY04/FY05: JTRS-M/F Block II is a competitively awarded development contract expected to be awarded in FY04.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS			X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
H/W Dev: JTRS-M/F Block I	CPAF	GDDS		13.850	Dec-02	8.658	Dec-03	2.857			25.365	
H/W Dev: JTRS-M/F Block II	CPAF	TBD				57.598	Dec-03	52.438		Continuing	Continuing	
Aircraft Integration-MIDS Upgrade	CPAF	TBD				15.000	TBD	23.000		12.000	50.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	13.850		81.256		78.295		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS			X3073 Joint Tactical Radio System-Maritime/Fixed						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	various	various		0.444	Dec-02	1.190	Dec-03	1.208	12/03	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.444		1.190		1.208		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	various	various		5.619		5.497	Dec-03	4.637		Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	5.619		5.497		4.637		Continuing	Continuing	
Remarks:												
Total Cost			0.000	19.913		87.943		84.140		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 104

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 12)

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		<b>JTRS-M/F BLOCK I</b>																				DATE: <b>February 2003</b>										
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-5</b>										PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS										X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>					△	Contract Award											△	Full Rate Production														
<b>Test &amp; Evaluation Milestones</b>																																
Developmental Testing (DT-IIA)																	△															
Operational Testing (OT-IIA)																					△											

R-1 SHOPPING LIST - Item No. 104

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

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						JTRS-M/F BLOCK I			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>		PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)				
Schedule Profile		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Prototype Phase										
System Design Review (SDR)										
Milestone B (MS-B)										
Contract Preparation										
Contract Award			1Q							
Software Specification Review (SSR)										
Preliminary Design Review (PDR)										
System Development										
Critical Design Review (CDR)										
Quality Design and Build										
Test Readiness Review (TRR)										
DT/OT Certification										
Developmental Test					2Q					
Eng Dev Model (EDM) Radar Delivery - Lab										
Software Delivery 1XXSW										
Preproduction Readiness Review (PRR)										
EDM Radar Delivery - Fit Related										
Milestone C (MS C)										
Contractor Testing										
Operational Testing					3Q					
Start Low-Rate Initial Production I (LRIP I)										
Software Delivery 2XXSW										
Developmental Testing (DT-IIB1)										
Developmental Testing (DT-IIB2)										
Start Low-Rate Initial Production II										
Operational Testing (OT-IIB)										
Developmental Testing (DT-IIC)										
Functional Configuration Audit (FCA)										
Low-Rate Initial Production I Delivery										
Technical Evaluation (TECHEVAL)										
Physical Configuration Audit										
Operational Evaluation (OT-IIC) (OPEVAL)										
Low-Rate Initial Production II Delivery										
Contract Award Production										
IOC										
Full Rate Production (FRP) Decision										
Full Rate Production Start										
First Deployment										

R-1 SHOPPING LIST - Item No. 104

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 10 of 12)



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		<b>JTRS-M/F BLOCK II</b>																				DATE: <b>February 2003</b>																		
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																				
<b>RDT&amp;E, N / BA-5</b>								PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS												X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
<b>Acquisition Milestones</b>								△ MSB												△ MSC																				
Prototype Phase									▬																															
Contract Preparation					▬																																			
Contract Award Development								△																																
Preliminary Design Review											△																													
System Development									▬																															
Critical Design Review													▬																											
<b>Test &amp; Evaluation Milestones</b>																																								
DT/OT Certification																																								
Contractor Testing																					△ CDT																			

R-1 SHOPPING LIST - Item No. 104

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

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					JTRS-M/F BLOCK II				DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>		PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS			X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)					
Schedule Profile		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Prototype Phase										
System Design Review (SDR)										
Milestone B (MS-B)			4Q							
Contract Preparation		2Q	4Q							
Contract Award Development				1Q						
Software Specification Review (SSR)		TBD		2Q						
Preliminary Design Review (PDR)				3Q						
System Development				1Q		4Q				
Critical Design Review (CDR)					1Q					
Quality Design and Build										
Test Readiness Review (TRR)						3Q				
DT/OT Certification								3Q		
Developmental Testing (DT-IIA)						3Q				
Eng Dev Model (EDM) Radar Delivery - Lab						2Q				
Software Delivery 1XXSW										
Preproduction Readiness Review (PRR)						4Q				
EDM Radar Delivery - Fit Related										
Milestone C (MS C)						4Q				
Contractor Testing										
Operational Testing (OT-IIA)										
Start Low-Rate Initial Production I (LRIP I)							1Q			
Software Delivery 2XXSW										
Developmental Testing (DT-IIB1)										
Developmental Testing (DT-IIB2)										
Start Low-Rate Initial Production II								1Q		
Operational Testing (OT-II)								3Q		
Developmental Testing (DT-IIC)										
Functional Configuration Audit (FCA)								1Q		
Low-Rate Initial Production I Delivery								2Q		
Technical Evaluation (TECHEVAL)								2Q		
Physical Configuration Audit										
Operational Evaluation (OT-II) (OPEVAL)								3Q		
Low-Rate Initial Production II Delivery									2Q	
Contract Award Production										
IOC								3Q		
Full Rate Production (FRP) Decision									1Q	
Full Rate Production Start									1Q	
First Deployment									3Q	

R-1 SHOPPING LIST - Item No. 104

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 12 of 12)

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE PE 0604300N - DD (X) Total Ship Systems Engineering			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	235.952	688.170	1,037.987	1,438.998	1,708.398	1,320.320	901.070	595.107
32463 / DD(X) 1 Construction	0.000	0.000	0.000	242.969	639.158	547.593	480.499	355.552
32464 / DD(X) System Design, Development and Int	133.867	588.849	845.890	1,039.714	1,022.334	725.746	372.708	190.805
32466 / Multi-Function Radar	66.210	46.300	23.047	12.393	0.000	0.000	0.000	0.000
32735 / Volume Search Radar	28.887	50.659	45.057	36.896	0.000	0.000	0.000	0.000
32880 / Power Node Control Centers (PNCC)	2.648	1.385	0.000	0.000	0.000	0.000	0.000	0.000
34009 / Advanced Gun System (AGS)	0.000	0.000	50.978	46.726	46.906	46.981	47.863	48.750
34010 / Integrated Power System (IPS)	0.000	0.000	73.015	60.300	0.000	0.000	0.000	0.000
34014 / DD(X) 2 Construction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39062 / Reg Elec Pwr Tec Integ & Lev (REPTILE)	2.899	0.977	0.000	0.000	0.000	0.000	0.000	0.000
39063 / Aluminum Mesh Tank Liner	1.441	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Defense Emergency Response Funds (DERF) Funds: N/A</b>								
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
<p>This Program Element (PE) provides funds for development of the DD(X) Class of U. S. Navy surface combatants, advanced development R&amp;D which is integral to DD(X); and Detailed Design and Construction of the first DD(X) class 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. The PNCC Congressional add pursues a technology which will support present and future surface ship and submarine platforms as a building block for increased use of electrical equipment. PNCC has the potential to integrate all of the shipboard power functions, such as switching, conversion, distribution and system operation and protection. The Congressional add for 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. The Aluminum Mesh Congressional add is being used for explosion suppression applications to prevent destructive pressures from being generated after the explosive ignition of vapors and gases.</p>								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 32463 - DD(X) 1 Construction			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>242.969</b>	<b>639.158</b>	<b>547.593</b>	<b>480.499</b>	<b>355.552</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project funds the detail design and construction of the first DD(X) Class Ship using RDT&E funding. DD(X), a multi-mission surface combatant tailored for land attack and maritime dominance, will provide independent forward presence and deterrence, and operate as an integral part of joint and combined expeditionary forces. In addition, the DD(X) program will provide a baseline for spiral development of technology and engineering to support a range of future surface ships such as the future cruiser (CG(X)) and the Littoral Combat Ship (LCS), to meet the maritime requirement well into the 21st century.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32463 - DD(X) 1 Construction
--	---	---

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	242.969
RDT&E Articles Quantity				

Begin detailed production planning for first DD(X) to include: Transition design from the functional design done prior to Critical Design Review (CDR) to a 3-D Design (Zone design); Begin initial development of purchase specifications / drawings for all the significant equipment; Begin detail design of DD(X); Begin initial competition and selection of components, issue contracts and begin production of components; Begin initial material procurement of long lead equipment; Begin logistics support analysis -- develop crew training; Populate the Computer Aided Design (CAD) and Smart Product Model (SPM) with additional detail and expand standard parts libraries for use in SPM; Design fixtures and gigs to facilitate construction; Begin production design for early work packages to include work instructions, schedules, work locations, material list, tooling, facilities and manpower requirements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32463 - DD(X) 1 Construction
---	---	---

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	0.000	0.000	0.000	248.208
Current BES/President's Budget: (FY04 Pres Controls)	0.000	0.000	0.000	242.969
Total Adjustments	0.000	0.000	0.000	-5.239

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Inflation Adjustment				-5.239
Reprogrammings				
Congressional increases				
Subtotal	0.000	0.000	0.000	-5.239

Schedule:

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 105

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32463 - DD(X) 1 Construction
---	---	---

**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component De	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT	CONT
BLI 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		

**E. 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) Design Agent occurred 3rd quarter FY 2002 to begin Contract Phase III. The Lead DD(X) will be competitively awarded in FY 2005.

**F. MAJOR PERFORMERS:**

**DD(X) Design Agent** - Northrop Grumman Ship Systems

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32463 - DD(X) 1 Construction						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	Compet	TBD						242.969	3QFY05	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		242.969		0.000	242.969	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												



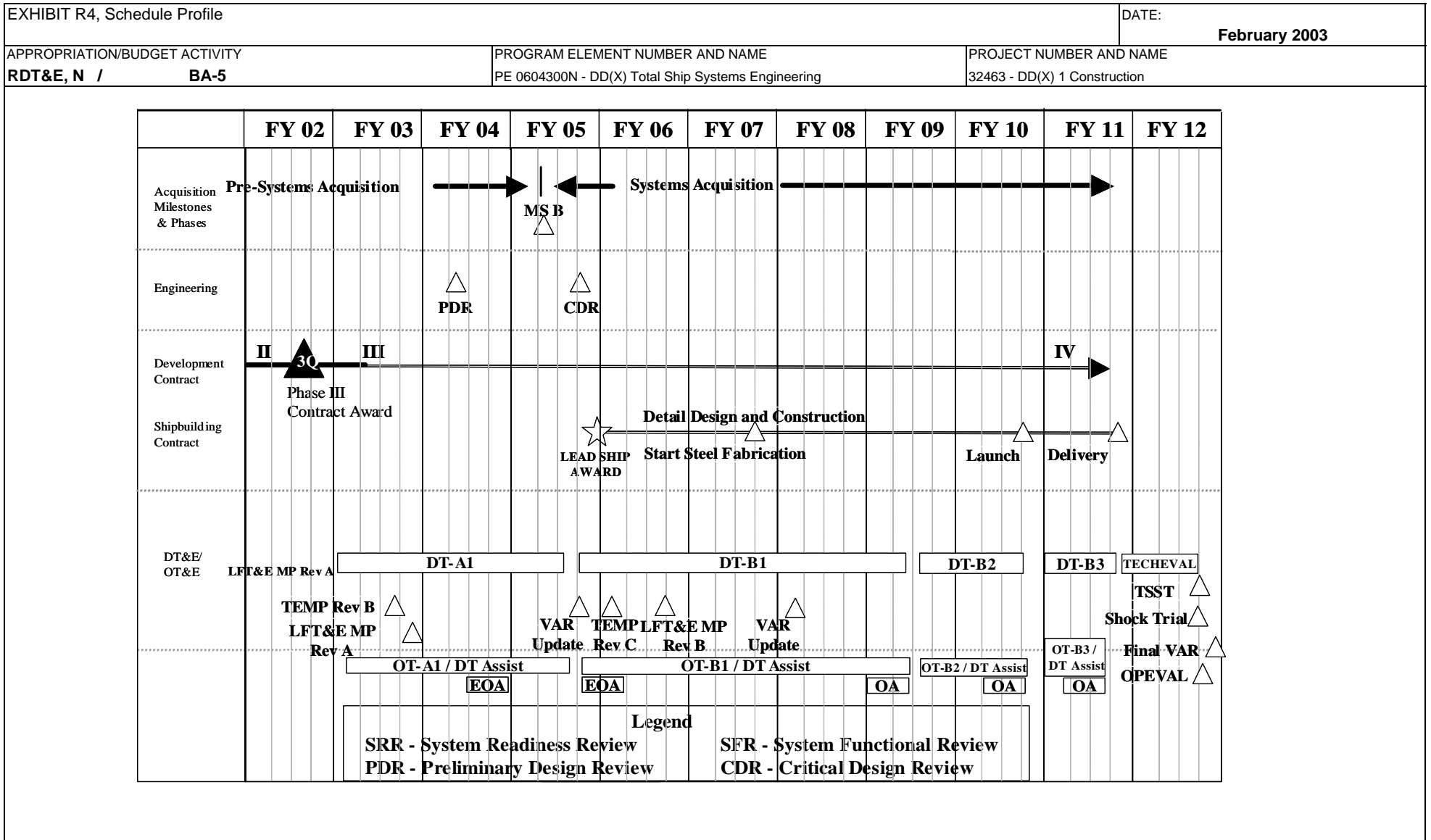
# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32463 - DD(X) 1 Construction						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
SBIR Assessment											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		242.969		0.000	242.969	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:



R-1 SHOPPING LIST - Item No. 105

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 32464 - DD(X) System Design, Development & Integration			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>133.867</b>	<b>588.849</b>	<b>845.890</b>	<b>1,039.714</b>	<b>1,022.334</b>	<b>725.746</b>	<b>372.708</b>	<b>190.805</b>
RDT&E Articles Qty								

**A. 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 the design, 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. In addition, this project includes efforts to incorporate the EDMs into the overall DD(X) ship design.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32464 - DD(X) System Design, Development & Integration
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	113.400	520.776	740.918	923.780
RDT&E Articles Quantity				

Completed DD(X) Initial System Design (Contract Phase II), completed DD(X) downselect and began DD(X) System Design (Phase III). Phase III includes the Spiral Development Review (SDR), system and subsystem development of prototypes/Engineering Development Models (EDMs), and planning, development and implementation of the life cycle support and engineering concepts. In FY03 begin planning for Preliminary Design Review (PDR), and conduct the Integrated Baseline Review (IBR) to establish the Performance Measurement Baseline (PMB). Update the Operational Requirements Document. In FY04 conduct the PDR and begin planning for the Critical Design Review (CDR). In FY05 conduct the CDR and Milestone B. Begin preparing for the Detail Design and Construction phase.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	13.712	43.248	57.730	65.208
RDT&E Articles Quantity				

Continued 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; Hull, Mechanical and Electrical; Command, Control, Communication and Computers; Modeling and Simulation; Total Ship Computing, and Test and Evaluation. Team will review and certify the DD(X) Design Agent software development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.781	13.472	25.525	28.571
RDT&E Articles Quantity				

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) System survivability as defined in the Test and Evaluation Master Plan (TEMP) 1560, the LFT&E Management Plan, and the Operational Requirements Document (ORD). In FY02, planned for Live Fire Weapons Effects Testing (WET). In FY03, conduct WET and analyze results to improve survivability methodologies and models. Plan and conduct other live fire, survivability and lethality testing and analysis, consistent with the LFT&E Management Plan Rev A. In FY04, begin testing of EDMs that will be incorporated into the DD(X) Ship Design. In FY05, Complete the Vulnerability Assessment Report (VAR) for the DD(X) Phase III prior to the DD(X) CDR.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32464 - DD(X) System Design, Development & Integration
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**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.974	11.353	21.717	22.155
RDT&E Articles Quantity				

Continue identification and risk mitigation efforts in high risk areas such as Manning, Life Cycle Engineering and Support (LCE&S), and Total Ship Computing. Continue Manning/Human Systems Integration (HSI) and LCE&S Integrated Product Teams (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. Establish Executive Steering Groups to review/ monitor specific Phase III technology development focus areas: Integrated Power System (IPS) and propulsion, Radar Suite and Software.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32464 - DD(X) System Design, Development & Integration			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		133.265	618.246	853.683	1,055.258
Current BES/President's Budget: (FY04 Pres Controls)		133.867	588.849	845.890	1,039.714
Total Adjustments		0.602	-29.397	-7.793	-15.544
Summary of Adjustments					
Congressional program reductions			-16.000		
Congressional undistributed reductions					
Congressional rescissions		-0.660	-7.118		
POM-04 realignment from DD(X) BA-4 budget to BA-5				15.300	12.000
Inflation Adjustments			-6.279	-19.526	-22.418
Reprogrammings		1.262			
Miscellaneous Adjustments				-3.567	-5.126
Subtotal		0.602	-29.397	-7.793	-15.544
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 105

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> PE 0604300N - DD(X) Total Ship Systems Engineering			<b>PROJECT NUMBER AND NAME</b> 32464 - DD(X) System Design, Development & Integration				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component De	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT	CONT
BLI 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		
<b>E. ACQUISITION STRATEGY:</b>										
(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) Design Agent occurred 3rd quarter FY 2002 to begin Contract Phase III.										
<b>F. MAJOR PERFORMERS:</b>										
<b>DD(X) Design Agent</b> - Northrop Grumman Ship Systems <b>Government Field Activities</b> - NAWC China Lake, NAWC Pt Mugu, NAWC TSD, NSWC Carderock, NSWC Crane, NSWC Dahlgren, NSWC Newport, NSWC Panama City, NSWC Port Hueneme, Naval Research Laboratory, SPAWAR Systems Center <b>Universities</b> - John Hopkins University / Applied Physics Laboratory and Georgia Tech Research Institute										

R-1 SHOPPING LIST - Item No. 105

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32464 - DD(X) System Design, Development & Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Initial System Concepts - Phase I	OTA	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 - Phase II	OTA	DD(X) Industry Team	139.919	0.000	N/A	0.000	N/A	0.000	N/A	0.000	139.919	
Primary H/W Development- Phase III	CPAF	DD(X) Design Agent	78.000	520.776	1QFY03	730.918	1QFY04	913.780	1QFY05	Continuing	Continuing	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			272.719	520.776		730.918		913.780		0.000	2,438.193	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: Support costs are included in the Development contract costs.												

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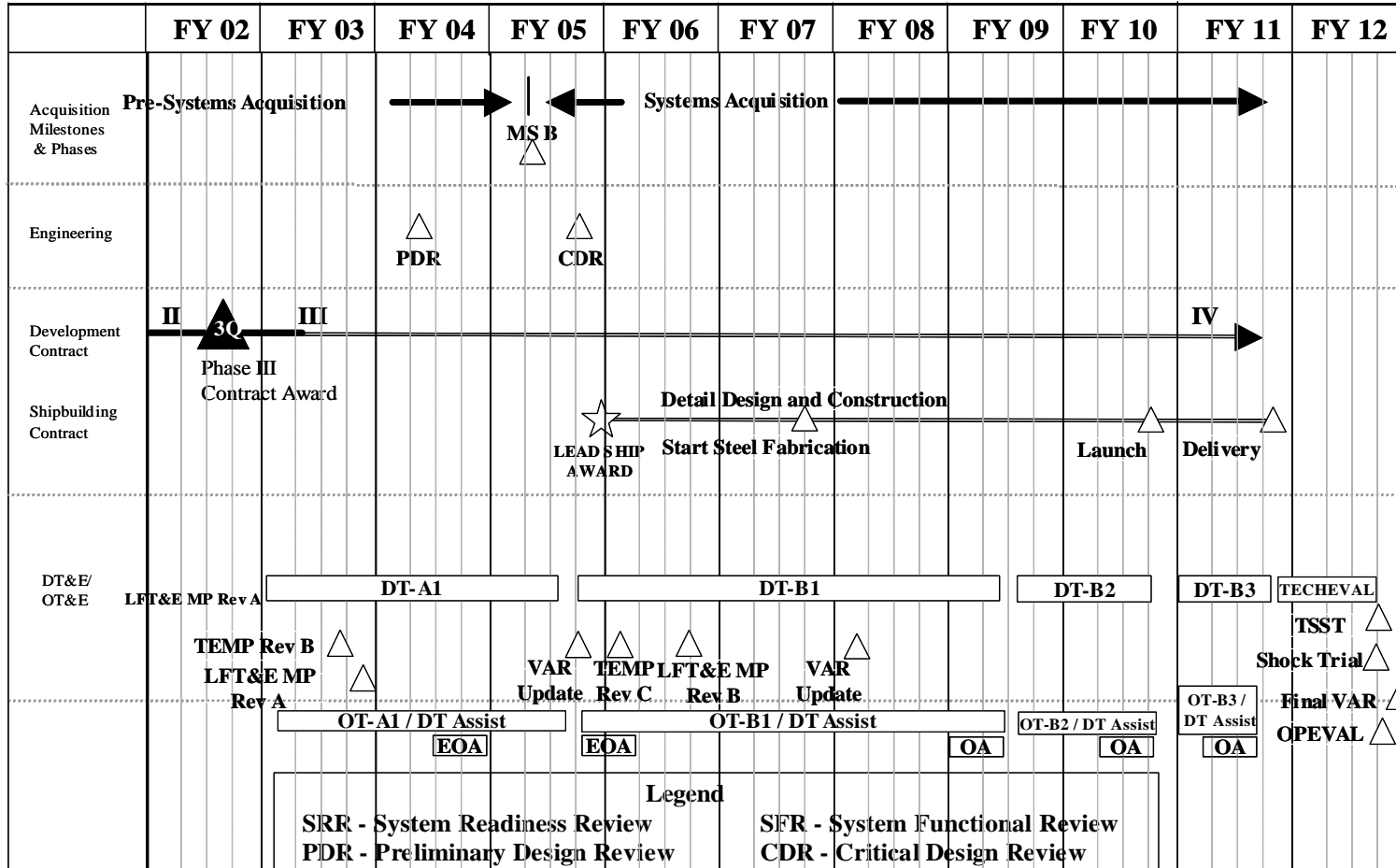
**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			PE 0604300N - DD(X) Total Ship Systems Engineering			32464 - DD(X) System Design, Development & Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	OTA	DD(X) Industry Teams	4.875	0.000	N/A	0.000	N/A	0.000	N/A	Continuing	Continuing	
Live Fire Test & Evaluation	CAPF	DD(X) Design Agent	0.000	4.100	12/02	0.000	N/A	0.000	N/A	Continuing	Continuing	
Live Fire Test & Evaluation	WR	NSWC CD Bethesda MD	10.262	4.550	11/02	7.921	11/03	8.921	11/04	Continuing	Continuing	
Live Fire Test & Evaluation	WR	NSWC DD Dahlgren VA	0.200	1.750	11/02	1.450	11/03	1.500	11/04	Continuing	Continuing	
Live Fire Test & Evaluation	Various	Various	5.150	3.072	11/02	16.154	11/03	18.150	11/04	Continuing	Continuing	
GFE												
Award Fees												
Subtotal T&E			20.487	13.472		25.525		28.571		0.000	88.055	
Remarks:												
Contractor Engineering Support	GSA/FFP	Anteon Arlington VA	6.800	8.817	11/02	10.320	11/03	11.820	11/04	Continuing	Continuing	
	GSA	GRCI, Falls Church VA	2.500	3.842	11/02	3.845	11/03	4.100	11/04	Continuing	Continuing	
	Misc	Various	6.100	2.565	11/02	2.668	11/03	2.890	11/04	Continuing	Continuing	
Government Engineering Support	WR	NSWC DD Dahlgren VA	41.232	11.105	11/02	25.855	11/03	27.005	11/04	Continuing	Continuing	
	WR	NSWC CD Bethesda MD	16.916	10.995	11/02	16.895	11/03	18.895	11/04	Continuing	Continuing	
	WR	NSWC CR Crane IN	3.712	1.000	11/02	2.000	11/03	2.650	11/04	Continuing	Continuing	
	WR	NSWC PHD Pt Hueneme CA	4.205	2.500	11/02	3.850	11/03	4.650	11/04	Continuing	Continuing	
	WR	SSCSD Dan Diego CA	5.657	1.204	11/02	2.604	11/03	3.404	11/04	Continuing	Continuing	
	WR	NUWC/N Newport RI	2.855	1.250	11/02	2.800	11/03	3.000	11/04	Continuing	Continuing	
	WR	NSWC/PC Panama City, FL	0.980	0.400	11/02	2.000	11/03	2.723	11/04	Continuing	Continuing	
	Various	Other Govt Activities	11.316	3.169	11/02	5.401	11/03	5.791	11/04	Continuing	Continuing	
Program Management Support	Various	Various	9.509	3.031	11/02	4.734	11/03	3.960	11/04	Continuing	Continuing	
Travel	Various	Various	1.712	1.500	Various	1.500	Various	1.500	Various	Continuing	Continuing	
Labor (Research Personnel)	CPFF	APL/JHU Laurel MD	8.357	3.223	11/02	4.975	11/03	4.975	11/04	Continuing	Continuing	
SBIR Assessment												
Subtotal Management			121.851	54.601		89.447		97.363		0.000	363.262	
Remarks:												
Total Cost			415.057	588.849		845.890		1,039.714		0.000	2,889.510	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32464 - DD(X) System Design, Development & Integration



R-1 SHOPPING LIST - Item No. 105

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 32466 - Multi-Function Radar (MFR)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>66.210</b>	<b>46.300</b>	<b>23.047</b>	<b>12.393</b>	<b>0.000*</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty		1						

**\*(1) Transferred to PE0603513N, Project 34019**

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project provides funds for the development of the Multi-Function Radar (MFR) in association with DD(X) . 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 03 to support Developmental Test/Operational Assessment (DT/OA) land-based and at-sea testing.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32466 - Multi-Function Radar (MFR)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	53.200	34.188	4.903	0.000
RDT&E Articles Quantity		1		

Engineering and Manufacturing Development (E&MD) phase of MFR hardware and software. Deliver and install Engineering Development Model (EDM) at Navy Land Based Test Site for Factory Testing in FY03. Conduct Factory Integration Testing. Provide test and integration support for land based and at-sea testing. Begin transition to production efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.970	4.796	9.719	8.418
RDT&E Articles Quantity				

Government Engineering Services and Program Management support for E&MD. Perform oversight and assessment of MFR E&MD efforts including factory and land-based Test and Evaluation. 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.267	6.504	6.500	2.400
RDT&E Articles Quantity				

Evaluation, planning, documentation, scheduling and conduct of Developmental Test / Operational Assessment. Hardware / Software updates resulting from DT/OA. Complete Navy Land Based Testing.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32466 - Multi-Function Radar (MFR)

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.773	0.812	1.925	1.575
RDT&E Articles Quantity				

Provide Program Management in support of the above milestones.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32466 - Multi-Function Radar (MFR)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		66.073	47.346	23.831	12.847
Current BES/President's Budget: (FY 04 Pres Controls)		66.210	46.300	23.047	12.393
Total Adjustments		0.137	-1.046	-0.784	-0.454
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions		-0.452	-0.544		
Congressional rescissions					
SBIR/STTR Transfer					
Inflation Adjustments			-0.502	-0.532	-0.267
Reprogrammings		0.589			
Miscellaneous Adjustments				-0.252	-0.187
Subtotal		0.137	-1.046	-0.784	-0.454
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 105

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> PE 0604300N - DD(X) Total Ship Systems Engineering				<b>PROJECT NUMBER AND NAME</b> 32466 - Multi-Function Radar (MFR)			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component De	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT	CONT
BLI 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		
<b>E. ACQUISITION STRATEGY:</b>										
(U) In FY 1999, the Government selected a single MFR contractor (Raytheon) to begin Phase III E&MD. EDM delivery will be in FY 2003.										
<b>F. MAJOR PERFORMERS:</b>										
<b>Prime Contractor</b> - Raytheon <b>Government Field Activities</b> - NSWC China Lake, NAWC Pt Mugu, NSWC Crane, NSWC, Dahlgren, NSWC Pt Hueneme, Naval Research Laboratory <b>Universities</b> - Applied Physics Lab/John Hopkins University, Georgia Tech Research Institute										

R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32466 - Multi-Function Radar (MFR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF/IF	Prime E&MD (Raytheon)	175.079	14.989	1QFY03	0.000	1QFY04	0.000	N/A	Continuing	Continuing	
	CPAF	DD(X) Design Agent	2.434	19.199	Various	4.903	N/A	0.000	N/A	Continuing	Continuing	
	CP	Various	12.414	0.000	N/A	0.000	N/A	0.000	N/A	0.000	12.414	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			189.927	34.188		4.903		0.000		0.000	229.018	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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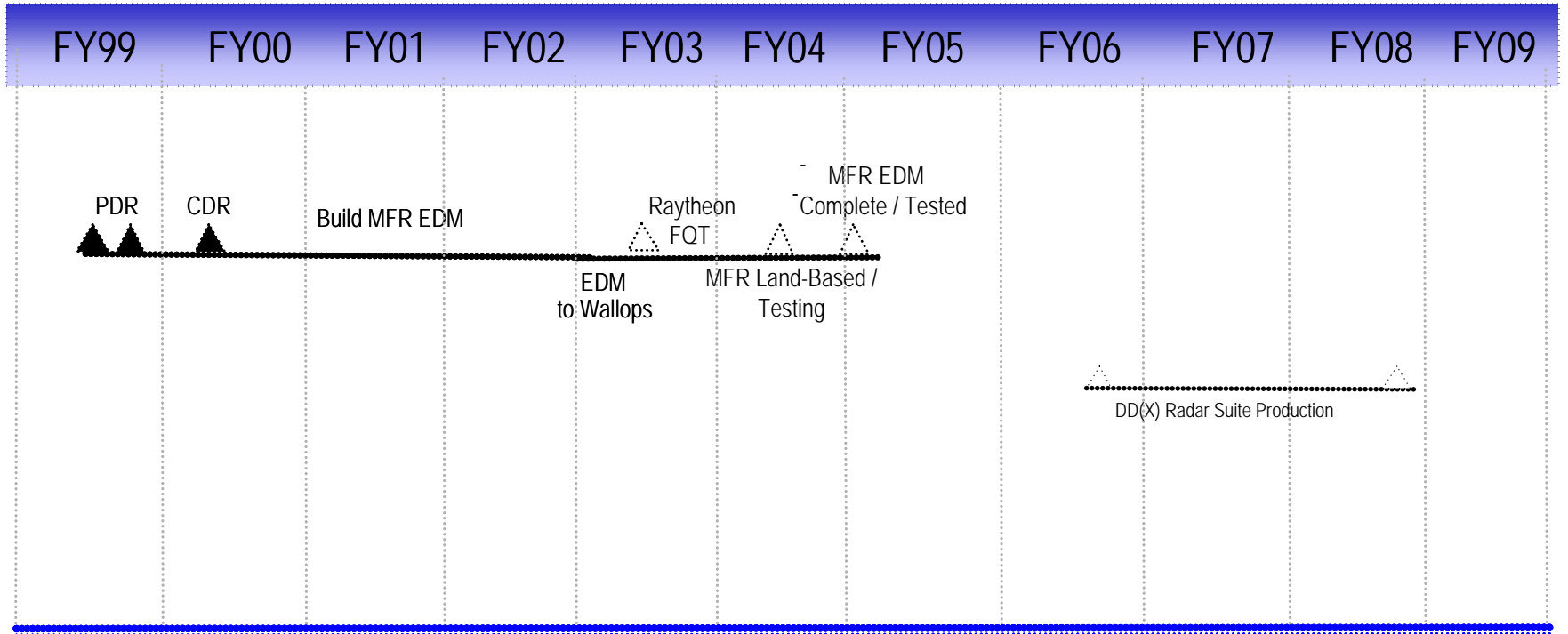
Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32466 - Multi-Function Radar (MFR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	7.466	2.059	11/02	3.500	11/03	1.500	11/04	Continuing	Continuing	
	CPAF	SCSC Wallops Island VA	1.262	0.894	11/02	0.000	11/03	0.000	11/04	0.000	2.156	
	SS/CPFF	JHU/APL Laurel MD	1.495	0.946	11/02	1.000	11/03	0.300	11/04	Continuing	Continuing	
	WR	NSWC PHD Pt Hueneme CA	1.044	0.426	11/02	1.000	11/03	0.300	11/04	Continuing	Continuing	
	WR	NSWC DD Dahlgren VA	0.000	0.984	11/02	1.000	11/03	0.300	11/04	Continuing	Continuing	
	WR/RC	NAWC Pt Mugu CA	0.000	1.195	11/02	0.000	11/03	0.000	11/04	0.000	1.195	
Subtotal T&E			11.267	6.504		6.500		2.400		0.000	26.671	
Remarks:												
Government Engineering Support	WR	NSWC DD Dahlgren VA	5.067	0.510	11/02	2.500	11/03	1.971	11/04	Continuing	Continuing	
	WR	NSWC PHD Pt Hueneme CA	2.764	0.201	11/02	1.250	11/03	0.900	11/04	Continuing	Continuing	
	SS/CPFF	APL/JHU Laurel MD	3.220	0.264	11/02	1.200	11/03	0.700	11/04	Continuing	Continuing	
	WR	Various	4.571	3.821	11/02	4.769	11/03	4.847	11/04	Continuing	Continuing	
Government Engineering Support											0.000	
Program Management Support	C/CPFF	Various	3.995	0.812	11/02	1.925	11/03	1.575	11/04	Continuing	Continuing	
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			19.617	5.608		11.644		9.993		0.000	46.862	
Remarks:												
Total Cost			220.811	46.300		23.047		12.393		0.000	302.551	
Remarks:												

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EXHIBIT R4, Schedule Profile		DATE:	<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-5</b>	PE 0604300N - DD(X) Total Ship Systems Engineering	32466 - Multi-Function Radar (MFR)	

MFR



R-1 SHOPPING LIST - Item No. 105

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 32735 - Volume Search Radar (VSR)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>28.887</b>	<b>50.659</b>	<b>45.057</b>	<b>36.896</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty			1					

**A. 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 Multi-Function Radar (MFR). A Test Article will be available in FY 04 to support Developmental Test/Operational Assessment (DT/OA) land-based and at-sea testing.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32735 - Volume Search Radar (VSR)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	26.000	39.013	40.901	35.738
RDT&E Articles Quantity			1	

Completed Phase II development efforts. In Phase III DD(X) Design Agent will finalize VSR design and procurement Engineering Development Model (EDM) hardware and will begin fabrication. Begin test and evaluation planning. In FY04, conduct VSR Factory Qualification Testing and prepare for Land Based Testing in FY05.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.375	9.643	4.156	1.158
RDT&E Articles Quantity				

Government Engineering Services and Program Management support for E&MD. Perform oversight and assessment of VSR E&MD efforts including Test and Evaluation. Support VSR Land Based Testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.415	2.003	0.000	0.000
RDT&E Articles Quantity				

Provide Program Management in support of the above milestones.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32735 - Volume Search Radar (VSR)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.097	0.000	0.000	0.000
RDT&E Articles Quantity			0	

Began planning, document and scheduling for VSR land and at-sea testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				



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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32735 - Volume Search Radar (VSR)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		28.711	51.805	46.135	37.728
Current BES/President's Budget: (FY04 Pres Controls)		28.887	50.659	45.057	36.896
Total Adjustments		0.176	-1.146	-1.078	-0.832
Summary of Adjustments					
Congressional undistributed reductions returned					
Congressional undistributed reductions		-0.080	-0.596		
Congressional rescissions					
SBIR/STTR Transfer					
Miscellaneous Adjustments				-0.038	-0.036
Reprogrammings		0.256			
Inflation Adjustments			-0.550	-1.040	-0.796
Subtotal		0.176	-1.146	-1.078	-0.832
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 105

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 32735 - Volume Search Radar (VSR)
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component De	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT	CONT
BLI 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		

**E. ACQUISITION STRATEGY:**

(U) Downselection to a DD (X) Design Agent occurred 3rd quarter FY2002. The DD(X) Design Agent will initiate fabrication delivery of the VSR EDM in FY 2004. MFR/VSR Radar Suite DT/OA is anticipated in FY 2003 through FY 2005.

**F. MAJOR PERFORMERS:**

**DD(X) Design Agent** - Northrop Grumman Ship Systems  
**Government Field Activities** - NAWC China Lake, NAWC Pt Mugu, NAWC TSD, NSWC Carderock, NSWC Crane, NSWC Dahlgren, NSWC Newport, NSWC Panama City, NSWC Port Hueneme, Naval Research Laboratory, SPAWAR Systems Center  
**Universities** - John Hopkins University / Applied Physics Laboratory, Applied Research Labs at University of Texas, University of Washington and Penn State University, Georgia Tech Research Institute

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32735 - Volume Search Radar (VSR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	OTA	DD(X) Industry Team	50.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	50.000	
	CPAF	DD(X) Design Agent	23.000	39.013	1QFY03	40.901	1QFY04	35.738	1QFY05	Continuing	Continuing	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			73.000	39.013		40.901		35.738		0.000	188.652	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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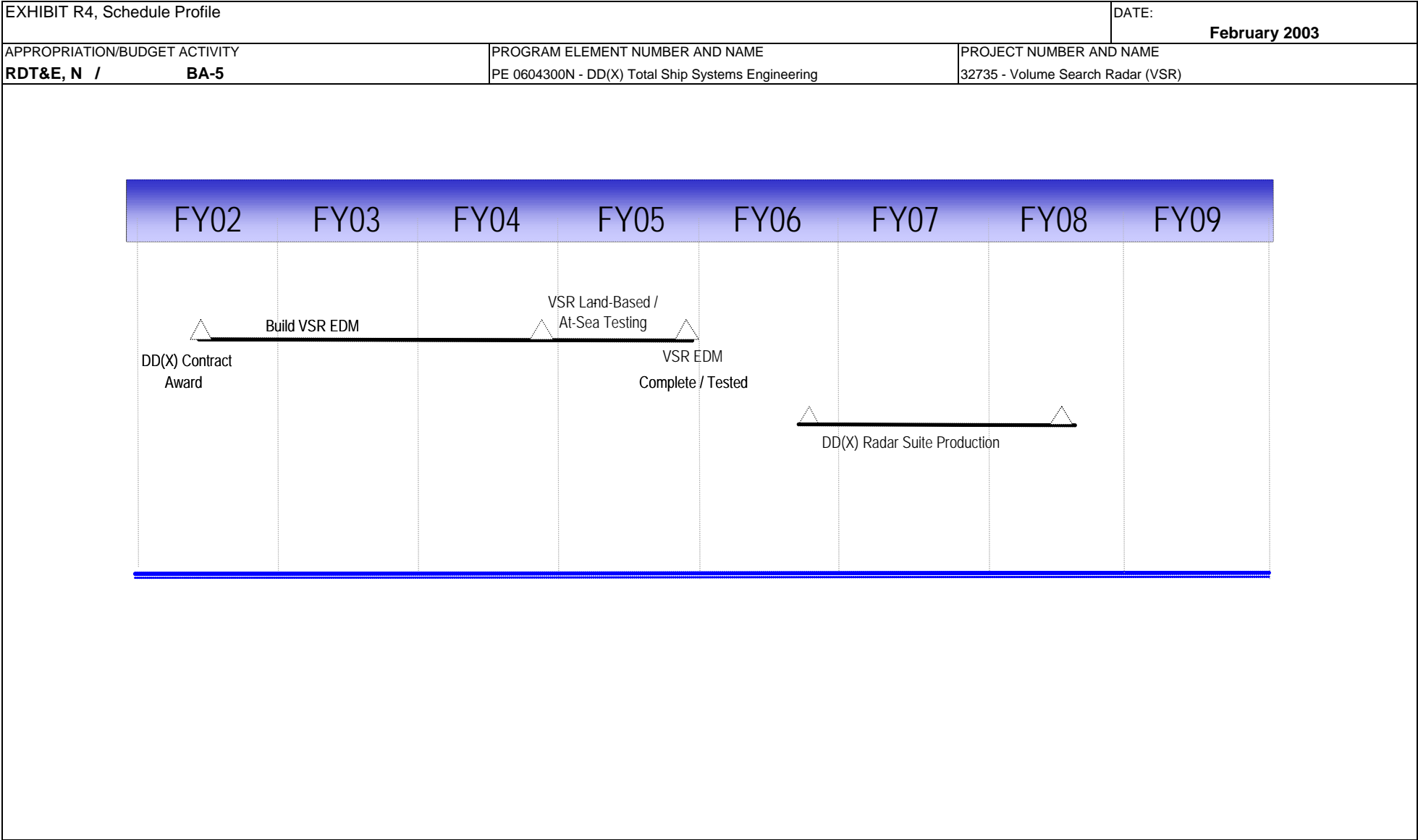
Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			32735 - Volume Search Radar (VSR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation	CPAF	SCSC Wallops Island VA	0.600	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.600	
	Various	Various	0.497	0.000	N/A	0.000	N/A	0.000	11/04	0.000	0.497	
											0.000	
Subtotal T&E			1.097	0.000		0.000		0.000		0.000	1.097	
Remarks:												
Government Engineering Support	WR	NSWC DD Dahlgren VA	1.646	1.860	11/02	0.000	11/03	0.000	11/04	Continuing	Continuing	
	WR	NSWC PHD Pt Hueneme CA	0.000	1.230	11/02	0.000	N/A	0.000	N/A	0.000	1.230	
	WR	Various	3.937	6.553	11/02	4.156	11/03	1.158	11/04	Continuing	Continuing	
Government Engineering Support												
Program Management Support	CPFF	Various	0.627	2.003	11/02	0.000	11/03	0.000	11/04	Continuing	Continuing	
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			6.210	11.646		4.156		1.158		0.000	23.170	
Remarks:												
Total Cost			80.307	50.659		45.057		36.896		0.000	212.919	
Remarks:												

R-1 SHOPPING LIST - Item No. 105

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering			PROJECT NUMBER AND NAME 34009 - Advanced Gun System (AGS)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>50.978*</b>	<b>46.726</b>	<b>46.906</b>	<b>46.981</b>	<b>47.863</b>	<b>48.750</b>
RDT&E Articles Qty			1					

\*Transferred from PE 0603513N, AGS Project 32467

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

These funds provide for the development of the Advanced Gun System (AGS) associated with the development of DD(X). The AGS will consist of a major caliber gun, an automated ammunition handling system, and a family of munitions/propelling charges. The AGS will, at a minimum, meet the Land Attack and Surface Dominance Missions assigned to the gun system. The system will provide a high rate of fire (approximately 12 rounds per minute) with a magazine capacity sufficient in size for meeting USMC operational requirements.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 34009 - Advanced Gun System (AGS)
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	13.040	0.000
RDT&E Articles Quantity			1	

Fabricate Assembly and test Magazine Engineering Development Model (EDM).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	9.253	0.000
RDT&E Articles Quantity				

Conduct Upper Gun Mount EDM Testing

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	7.823	0.000
RDT&E Articles Quantity				

Fabricate Assembly and Test Integration System Control (ISC).



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 34009 - Advanced Gun System (AGS)
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	13.040	20.475
RDT&E Articles Quantity				

Continue LRLAP EDM development and testing.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	7.822	0.000
RDT&E Articles Quantity				

Support Ship Design development with Gun, Magazine, LRLAP integration efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	19.094
RDT&E Articles Quantity				

Commence integration of Gun, Magazine, ISC EDMs.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 34009 - Advanced Gun System (AGS)
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	7.157
RDT&E Articles Quantity				

Commence Land Based testing of AGS EDM.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	PE 0604300N - DD(X) Total Ship Systems Engineering	34009 - Advanced Gun System (AGS)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	0.000
Current BES/President's Budget: (FY 04 Pres Controls)		0.000	0.000	50.978	46.726
Total Adjustments		0.000	0.000	50.978	46.726
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
POM-04 realignment from DD(X) BA-4 budget to BA-5				52.158	47.736
SBIR/STTR Transfer					
Inflation Adjustments				-1.177	-1.007
Miscellaneous Reductions				-0.003	-0.003
Reprogrammings					
Congressional increases					
Subtotal		0.000	0.000	50.978	46.726
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> PE 0604300N - DD(X) Total Ship Systems Engineering			<b>PROJECT NUMBER AND NAME</b> 34009 - Advanced Gun System (AGS)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component De	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT	CONT
BLI 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		
<b>E. ACQUISITION STRATEGY:</b>										
(U) The Navy conducted a comparison of concepts for the DD(X) Advanced Gun System, the results of which were reported to Congress by SECNAV on 10/99. The Advanced Gun System will be acquired in conjunction with the DD(X) development schedule. Initial phases were conducted under section 845/804 other transaction authority. Initial phases include: Phase I – Concept Formulation, Phase II - Initial Prototype Development. Downselection to a single DD(X) Design Agent occurred in 3rd quarter FY02 to begin Phase III. The AGS EDM development will continue under this contract.										
<b>F. MAJOR PERFORMERS:</b>										
<p><b>Contractors</b> - United Defense Limited Partnership and DD(X) Design Agent - Northrop Grumman Ship Systems</p> <p><b>Field Activities</b> - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme, NSWC Port Hueneme Louisville detachment, NSWC Indian Head</p> <p><b>Universities</b> - N/A</p>										

R-1 SHOPPING LIST - Item No. 105

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering			34009 - Advanced Gun System (AGS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	DD(X) Design Agent				42.019	1QFY04	36.935	1QFY05	Continuing	Continuing	
Ship Integration												0.000
Ship Suitability												0.000
Systems Engineering												0.000
Training Development												0.000
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			0.000	0.000		42.019		36.935		0.000	78.954	
Remarks:												
Development Support												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
Award Fees												0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DD(X) Total Ship Systems Engineering				34009 - Advanced Gun System (AGS)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	GSA/CPFF	Anteon Arlington VA				2.469	10/03	2.594	10/04	Continuing	Continuing	
	Various	Other Contractors				0.825	Various	0.900	Various	Continuing	Continuing	
Government Engineering Support	WR	NSWC DD Dahlgren VA				2.465	10/03	3.000	10/04	Continuing	Continuing	
	WR	NSWC PHD Pt Hueneme CA				1.600	10/03	1.600	10/04	Continuing	Continuing	
	WR	Other Gov't Activities				1.600	Various	1.697	Various	Continuing	Continuing	
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		8.959		9.791		0.000	18.750	
Remarks:												
Total Cost			0.000	0.000		50.978		46.726		0.000	97.704	
Remarks:												

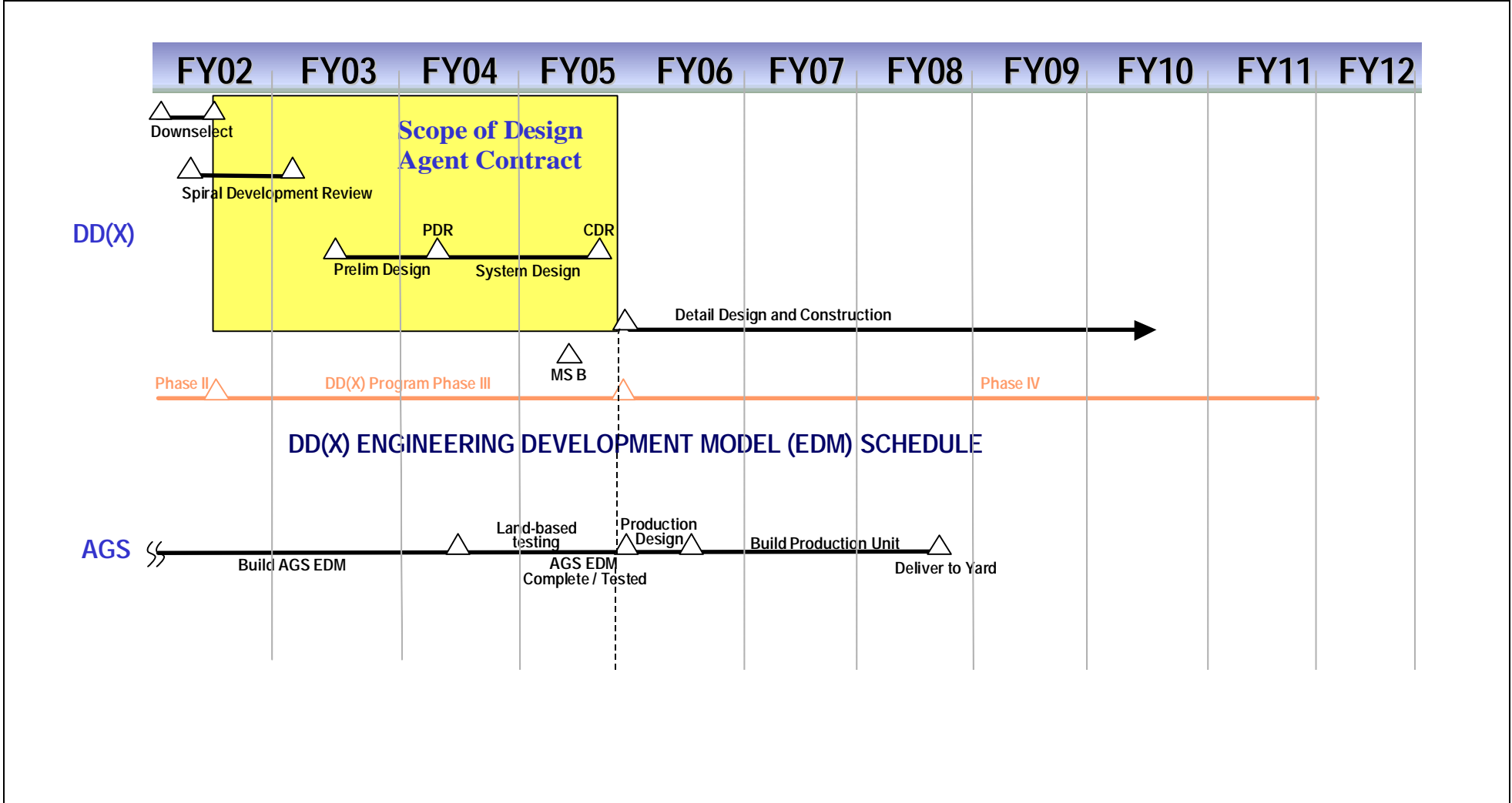
R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 34009 - Advanced Gun System (AGS)



R-1 SHOPPING LIST - Item No. 105

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering			PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	0.000	73.015	60.300	0.000	0.000	0.000	0.000
RDT&E Articles Qty	0	0	0	0	0	0	0	0

**\*FY 2004 and FY 2005 IPS DD(X) funds transferred from PE 0603513N IPS Project 32471**

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides funds to develop and test integrated power system Engineering Development Modules (EDMs) for DD (X) including Permanent Magnet (PM) motor and motor drive technologies . On 6 January 2000, SECNAV announced Navy intent that DD(X) be an electric drive ship with integrated power architecture. IPS reduces acquisition and operating costs of naval ships and increases military effectiveness. IPS provides total ship electric power, including electric propulsion, power conversion and distribution, and mission load interfaces to the electric power system. IPS leverages investments in technologies that will be useable by both military and commercial sectors.

- (U) IPS has the potential to revolutionize the design, construction, and operation of U.S. naval ships by using electricity as the primary energy transfer medium aboard ship. The flexibility of electric power transmission allows power generating modules with various power ratings to be connected to propulsion loads and ship service in any arrangement that supports the ship's mission at lowest overall cost. Systems engineering in IPS is focused on increasing the commonality of components used across ship types and in developing modules which will be integral to standardization, zonal system architectures, and generic shipbuilding strategies. The purpose of increased commonality is to reduce the total cost of ship ownership by using common modules composed of standard components and/or standard interfaces.

- (U) IPS addresses ship platform program goals through: reduced ship acquisition cost through integration of propulsion and ship's service prime movers; lower ship operational costs resulting from more flexible operating characteristics and more efficient components; reduced ship construction costs by allowing more extensive modular construction of power generation, distribution, and loads; improved ship survivability and reduced vulnerability through increased arrangement flexibility and improved electrical system survivability; reduced manning through improved power management systems and reduced on-board maintenance requirements; improved ship signature characteristics; improved design adaptability to meet future requirements of multiple ship types or missions; integrating power management and protection by fully utilizing the power electronics in the system to perform fault protection as well as power conversion and load management functions; simplified technology insertion which allows new technologies to be installed within IPS much less expensively than presently possible; and, reduced machinery system acquisition costs through utilization of commercially shared technologies and components.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering	PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	73.015	60.300
RDT&E Articles Quantity	0	0	0	0

Platform Specific Development: FY02 & 03 funds are in PE 0603513N Project 32471. Fabricate two (2) DD(X) IPS Engineering Development Models (EDMs) for land based and at-sea testing. Perform factory acceptance tests of major components. In support of DD(X) IPS EDM land based and at sea testing, complete test site preparations and prepare test plans. Deliver DD(X) IPS EDMs to land based and at sea test platforms. Install, checkout, integrate and conduct land based and at sea testing.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering	PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	0.000
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)		0.000	0.000	73.015	60.300
Total Adjustments		0.000	0.000	73.015	60.300
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
POM-04 realignment from DD(X) BA-4 budget to BA-5				74.700	61.600
SBIR/STTR Transfer					
Inflation Adjustments				-1.685	-1.300
Reprogrammings					
Congressional increases					
Subtotal		0.000	0.000	73.015	60.300
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering	PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N/ Shipboard Sys Component	280.795	256.366	20.431	19.251	33.646	23.513	21.763	22.132	CONT.	CONT.
PE 211900 / SCN	0.000	0.000	0.000	0.000	1,842.142	1,409.086	2,297.603	3,549.907		

**E. ACQUISITION STRATEGY:**

(U) IPS is a candidate system for DD(X) and all other future surface ships.

**F. MAJOR PERFORMERS:**

IPS DD(X) Design Agent, Northrop Grumman Ship Systems

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604300N/ DD(X) Total Ship Sys Engineering				34010/Integrated Power Systems on DD(X)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	DD(X) Design Agent				73.015	10/03	60.300	10/04	CONT	CONT	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
<b>Subtotal Product Development</b>			0.000	0.000		73.015		60.300		CONT	CONT	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
GFE											0.000	
Award Fees											0.000	
<b>Subtotal Support</b>			0.000	0.000		0.000		0.000			0.000	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604300N/ DD(X) Total Ship Sys Engineering			PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		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	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		CONT	CONT	
Remarks:												
Total Cost			0.000	0.000		73.015		60.300		CONT	CONT	
Remarks:												

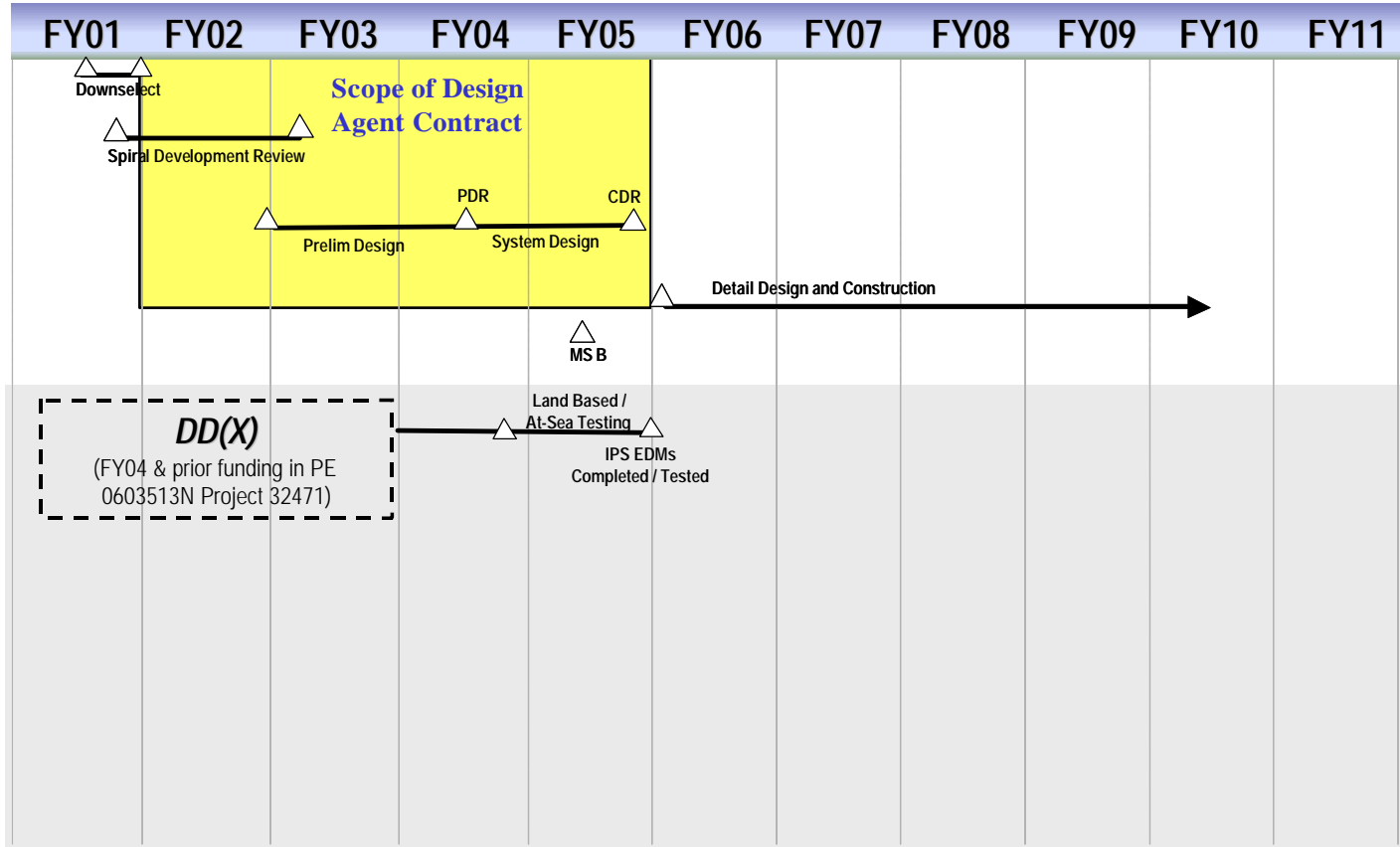
R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604300N/ DD(X) Total Ship Sys Engineering	PROJECT NUMBER AND NAME 34010/Integrated Power Systems on DD(X)



R-1 SHOPPING LIST - Item No. 105

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE 0604307N/AEGIS COMBAT SYSTEM ENGINEERING
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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>Total PE Cost</b>	<b>320.187</b>	<b>340.426</b>	<b>205.733</b>	<b>208.048</b>	<b>217.746</b>	<b>217.286</b>	<b>230.800</b>	<b>206.056</b>
K1447/Surface Combatant Combat System	250.148	284.952	205.273	203.629	213.241	212.699	226.130	201.486
K1776/Surface Combatant Weapon System Mods	4.115	4.257	0.460	4.419	4.505	4.587	4.670	4.570
K3044/Solid State Spy Radar	0.000	6.328	0.000	0.000	0.000	0.000	0.000	0.000
K9064/AEGIS Operational Readiness	3.905	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9065/Peripheral Consolidation	6.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9066/AEGIS Tactical Display	6.875	17.994	0.000	0.000	0.000	0.000	0.000	0.000
K9067/Navy Area Theater Transfer	47.819	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9068/Traveling Wave Tube Circuit	0.981	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9221/DDG-51 Optimized Manning	0.000	2.445	0.000	0.000	0.000	0.000	0.000	0.000
K9222/ Knowledge Projection	0.000	1.467	0.000	0.000	0.000	0.000	0.000	0.000
K9223/Silicon Carbide MMIC Production	0.000	1.467	0.000	0.000	0.000	0.000	0.000	0.000
K9225 S-Band Radar Research	0.000	21.516	0.000	0.000	0.000	0.000	0.000	0.000

**A. 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 weapon system developments 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 backfitted into CG 47 Class and DDG 51 Class ships already in the Fleet, providing new 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, COTS refresh development efforts will be necessary to pace the core Baseline development work and are included. This Program Element also 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 considerably less difficult to maintain and modernize and mitigates the cost of inevitable required and repetitive technology refresh.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>311.186</b>	<b>302.946</b>	<b>205.273</b>	<b>203.629</b>	<b>213.241</b>	<b>212.699</b>	<b>226.130</b>	<b>201.486</b>
RDT&E Articles Qty	<b>Not Applicable</b>							

**A. 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 is 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/UYK-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 two steps (Phases): Phase I integrated AEGIS ER and supported the missile Initial Operational Capability; Phase III integrated system upgrades including Defensive Electronic Attack, Track Load Control algorithms, and Track Initiation Processor (integrated on 5.3, DDGs 68+ ); JTIDS and the OJ-663 color display Tactical Graphics Capability into the ACS. Baseline 6 Phase I supported OPEVAL of CEC in CGs 66 and 69 and was introduced in the DDG 51 class beginning with the last ship, DDG 79. Baseline 6 Phase III is planned for the first ship in FY 1997, DDG 85. Baseline 6 Phase III upgrades will 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 third DDG 51 Class ship in FY 1998, DDG 91. 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 and other warfighting 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 Baseline 7 Phase I, and two variants of 7 Phase IC (due to different radar configurations and COTS Refresh periods). Baseline 6 Phase IIIR has been replaced by Baseline 5.4, which provides the accelerated introduction of CEC integration on backfit DDGs and test activity necessary to field CEC on Baseline 5 DDGs (DDGs 51-78). 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 considerably less difficult to maintain and modernize and mitigates the cost of inevitable required and repetitive technology refresh.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067 Surface Combatant Combat System

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	12.232	6.011	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Continued Baseline 6 Phase III development and prepared for ESSM Developmental Testing (DT)/Operational Testing (OT).

Planned: Complete the maturation of Baseline 6 Phase III computer program in support of ESSM DT/OT. Deliver final Quality Assured (QA) load in December 2002. Implement quality standard by reducing CPCRC count and number of deficiency workarounds.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	20.000	17.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Initiated the development of Baseline 5.4. Conducted an Initial Design Review and a Final Design Review in order to define the interface design between CEC and a Baseline 5 DDG Combat System.

Planned: Begin coding and debugging efforts, Initiate integration and test effort for CEC integration culminating in a September 2003 IPR.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	56.470	56.056	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Continued 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). Completed first Acceptance Test Procedure (ATP) on DDG 91 equipment. Conducted engineering assessment of Baseline 7 Phase I capabilities. Delivered program to shipyards for first level testing in new construction ships.

Planned: Continue maturation of Baseline 7 Phase I in support of Land Based SPY-1D(V) DT/OT and DDG 91 ship building milestones. Conduct demonstration of Baseline 7 Phase I capabilities. Implement quality standard by reducing CPCRC count and number of deficiency workarounds.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System
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**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	29.000	20.588	17.374	13.000
RDT&E Articles Quantity				

Accomplishments: Analyzed and assessed candidate components to replace Diminishing Manufacturing Sources (DMS) equipment in Baseline 7 Phase I and recommended COTS equipment solution for Baseline 7 Phase I Refresh, to be introduced on DDG 103. Conducted equipment In Process Review (IPR) in order to make final selection. Initiated Design, Code, and Test efforts for Baseline 7 Phase I Refresh. Continue level of effort necessary for COTS selection for future baseline efforts (ie. Baseline 7 Phase II and Baseline 7 Phase IC Refresh).

Planned: Continue coding, debugging and testing of Baseline 7 Phase I COTS Refresh necessary for fielding DDGs 103-107. Conduct computer program IPR and Baseline 7 phase IR engineering

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost		24.000	27.290	53.580
RDT&E Articles Quantity				

Planned: Introduce AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs. Conduct software requirements review. Continue development of AEGIS baseline 7 Phase II Open Architecture (OA) effort, including rearchitecting SPY search and track. Continue conduct of software requirements review.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	63.353	80.364	74.210	47.733
RDT&E Articles Quantity				

Accomplishments: Continued development of Baseline 7 Phase IC computer program for the Cruiser Conversion Program which incorporates Land Attack capabilities into the Baseline 2 through 4 Cruisers. Conducted Preliminary Design Review (PDR) and In-process Review (IPR). Analyzed and assessed candidate components to replace DMS equipment with carefully selected components for Baseline 7 Phase IC COTS Refresh. Began SIGPRO integration.

Planned: Prepare for and conduct Critical Design Review for Baseline 7 Phase IC. Begin integration efforts for evolutionary warfighting capabilities. Continue SPY-1 D(V) Signal processor integration.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067 Surface Combatant Combat System		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	6.344	0.000	0.000	0.000
RDT&E Articles Quantity				
Accomplishments: (FY02 Congressional Plus-up / K9065) Conducted systems engineering and development of direct replacements for AWS peripheral sub-systems, sub-assemblies, and equipment no longer in production.				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	6.875	17.944	0.000	0.000
RDT&E Articles Quantity				
Accomplishments: (FY02 Congressional Plus-up / K9066) As a risk mitigator in the field of Human Systems Interface (HSI) in Baseline 7 Phase II, conducted AEGIS Tactical Display Upgrade efforts.				
Planned: (FY03 Congressional Plus-up / K9066) As a risk mitigator in the field of Human Systems Interface (HSI), in Baseline 7 Phase II, will conduct AEGIS Tactical Display Upgrade efforts.				
	FY 02*	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	47.819	35.500	0.000	0.000
RDT&E Articles Quantity				
Accomplishments: Navy Area Theater Transfer to the Navy to disable Area TBMD code, carry out the orderly termination of Area TBMD program and conduct those efforts necessary to complete Baseline 6 Phase III and Baseline 7 Phase I computer program development.				
Planned: Efforts include the update of documentation including revised technical specifications, training manuals, and curriculum. Continued engineering and ship waterfront integration support and maintain necessary infrastructure including site operations. Conduct regression testing of Baseline 6 Phase III and Baseline 7 Phase I to verify and validate AAW performance after disabling TBMD code.				
*K9067 Navy Area Theater Transfer				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System
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**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	23.850	19.220	26.627	28.488
RDT&E Articles Quantity				

Accomplishments/Planned: Continued to provide the RDT&E share of operations and maintenance of the Combat System Engineering Development Site(CSEDs), Program Generation Center, Computer Program Test Site, and Land Based Test Site.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	19.096	17.018	18.149	20.405
RDT&E Articles Quantity				

Accomplishments./Planned: Provided 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 and ESSM. 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	26.147	5.145	4.323	3.323
RDT&E Articles Quantity				

Accomplishments: Successfully completed transition of knowledge from JHU/APL to Prime Contractor, GDAIS.

Planned: Working toward achieving Validation, Verification & Acceptance (VV&A) and Joint Acceptance through Open Architecture. AADC Capability will continue to be incorporated into the Cruiser Conversion Program.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067 Surface Combatant Combat System

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost		4.100	8.300	1.100
RDT&E Articles Quantity				

Planned: Provides the initial and continuation of funds necessary to allow for the implementation and of the SIAP Blk 0 correlation/development Interface Change Proposal (ICP) into AEGIS Baselines.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost			27.000	34.000
RDT&E Articles Quantity				

Planned: Support AWS Baseline Replan initiatives. Initiatives include capture of high priority CPCR fixes from previous baselines into Baseline 7 Phase IC and Baseline 7 Phase IR, NSWC-DD test requirements, and SPY-1D(V) Techeval/Opeval support .

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost			2.000	2.000
RDT&E Articles Quantity				

Planned: Begin CIWS Blk IB AAW mode integration in Baseline 7 Phase IR targeted for DDG 103. Complete CIWS BLK-1B integration in Baseline 7 Phase IR targeted for DDG 103.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	317.407	291.425	201.193	144.614
Current BES/President's Budget: (FY04/05 Pres Controls)	311.186	302.946	205.273	203.629
Total Adjustments	-6.221	11.521	4.080	59.015

Summary of Adjustments

Congressional program reductions				
Congressional Increase		18.400		
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-2.917	-6.879	-6.432	-6.385
Reprogrammings	3.502			
Programmatic Adjustments			10.512	65.400
SBIR	-6.806			
Subtotal	-6.221	11.521	4.080	59.015

Schedule:

Open Architecture funding profile supports fielding in FY12.

Technical:

- 1) Baseline 6 Phase III Refresh has been replaced by Baseline 5.4 which is now the enabler for Cooperative Engagement Capabilities (CEC) integration on backfit DDGs (DDG 51-78).
- 2) AWS Baseline Replan funding includes:
  - A) Increased focus in Baseline 6 Phase III, Baseline 7 Phase I and Baseline 7 Phase IC allowing capture of high priority Computer Program Change Requests (CPCRs) fixes from previous baselines
  - B) SPY-1D(V) Development Test (DT)/Operational Test (OT) and Techeval/Opeval support and PCR capture into Baseline 7 Phase I.
  - C) Naval Surface Warfare Center - Dahlgren Division (NSWC-DD) Baseline 6 Phase III and Baseline 7 Phase I 2nd test team requirements.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN LI2122 - DDG 51*	3227.285	2668.076	3198.311	3440.605	193.635	292.294				Cont.
SCN LI2020 - CG Conversion*			194.44	439.033	469.17	447.437	679.381	691.534		Cont.
OPN LI5246 - AEGIS Supt. Eqp	154.107	158.04	105.227	105.205	104.708	105.291	109.406	106.121		Cont.
RDT&E,N 0603382N - Advanced Combat Sys	3.111	3.276	3.394	3.346	1.918	0.981	0.985	0.999		Cont.

\* TOA excludes outfitting and post delivery.

**E. 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.

**F. MAJOR PERFORMERS:**

Lockheed Martin, Moorestown, NJ (Combat System Design Agent/Prime Contractor) - 4/98  
NSWC/DD, Dahlgren, VA (Lifetime Support Engineering Agent)

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N/AEGIS COMBAT SYSTEM ENGINEERING			K1447/K9065/K9066/K9067Surface Combatant Combat System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	690.226	209.126	01/03	138.372	01/04	137.276	01/05	Cont.	Cont.	
Systems Engineering	SS/CPFF	APL, Baltimore MD	26.607	1.206	10/02	0.880	10/03	0.873	10/04	Cont.	Cont.	
Systems Engineering	WR/RCP	NSWC, Dahlgren VA	74.957	34.084	na	24.881	na	24.682	na	Cont.	Cont.	
Systems Engineering	BPA	PCI, VA Beach, VA	7.950	3.444	10/02	2.514	10/03	2.494	10/04	Cont.	Cont.	
Systems Engineering	WR	NSWC, PHD CA	26.600	3.434	11/02	2.507	11/03	2.487	11/04	Cont.	Cont.	
Systems Engineering	WR/RCP	NWAS, Corona CA	4.053	2.270	11/02	1.657	11/03	1.644	11/04	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	32.399	1.092	06/03	0.797	06/04	0.791	06/05	Cont.	Cont.	
Systems Engineering	WR	SPAWAR	3.925	0.970	11/02	0.708	11/03	0.702	11/04	Cont.	Cont.	
Systems Engineering	CPFF	Techmatics	2.000	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Systems Engineering	WR/RCP	Miscellaneous	31.797	1.725	various	2.657	na	2.636	na	Cont.	Cont.	
Systems Engineering	WR/RCP	Dam Neck	6.443	0.000	various	0.000	various	0.000	various	Cont.	Cont.	
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	93.865	28.231	07/03	19.109	07/04	18.944	07/05	Cont.	Cont.	
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	0.580	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Award Fees	SS/CPAF	PCI, VA Beach, VA	0.625	0.000	na	0.000	03/04	0.000	03/05	Cont.	Cont.	
Award Fees	SS/CPAF	General Dynamics	3.600	0.121	06/03	0.000	06/04	0.000	06/05	Cont.	Cont.	
Award Fees	WR/RCP	Miscellaneous	2.790	0.000	various	0.000	various	0.000	various	Cont.	Cont.	
Subtotal Product Development			1010.404	285.703		194.082		192.529		Cont.	Cont.	
Support	CPFF	APL, Baltimore MD	7.796	0.605	10/02	0.442	10/03	0.438	10/04	Cont.	Cont.	
Support	WR	NSWC, Pt. Hueneme, CA	4.501	0.507	11/02	0.370	11/03	0.367	11/04	Cont.	Cont.	
Support	WR	NSWC, Dahlgren VA	2.667	0.060	na	0.044	na	0.043	na	Cont.	Cont.	
Support	WR/RCP	Miscellaneous	6.509	2.725	various	1.989	various	1.973	various	Cont.	Cont.	
Subtotal Support			21.473	3.897		2.845		2.821		Cont.	Cont.	
Remarks:												

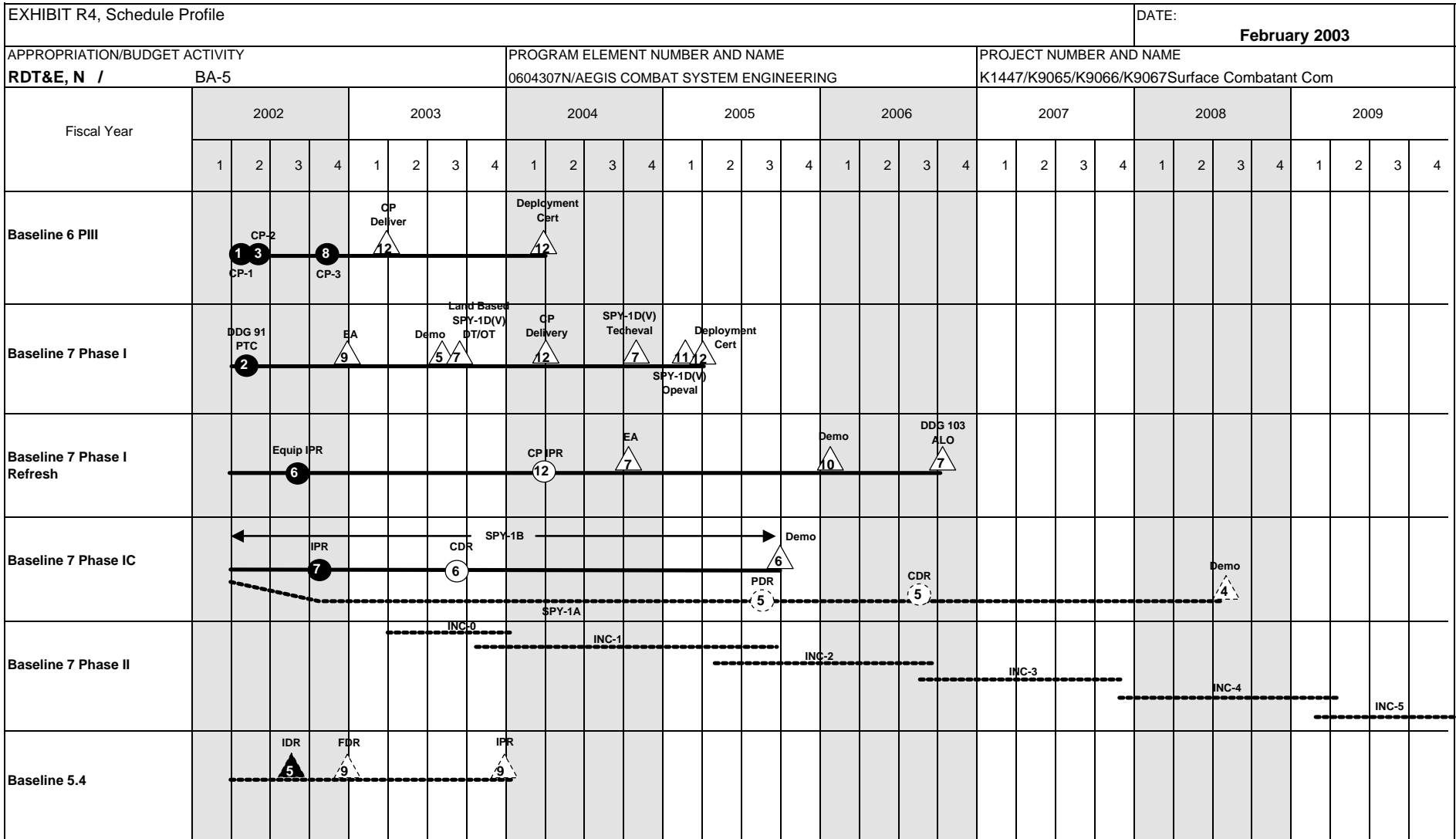
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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N/AEGIS COMBAT SYSTEM ENGINEERING			K1447/K9065/K9066/K9067Surface Combatant Combat System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	SS/CPAF	Lockheed, Moorestown, NJ	16.322	3.300	07/03	2.409	07/04	2.390	07/05	Cont.	Cont.	
Test and Evaluation	WR	NSWC, Pt. Hueneme, CA	6.084	0.756	11/02	0.552	11/03	0.547	11/04	Cont.	Cont.	
Test and Evaluation	CPFF	APL, Baltimore MD	3.500	0.000	10/02	0.000	10/03	0.000	10/04	Cont.	Cont.	
Test and Evaluation	WR/RCP	Miscellaneous	9.512	1.991	various	2.851	various	2.829	various	Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
Subtotal T&E			35.418	6.047		5.812		5.766		Cont.	Cont.	
Remarks:												
Program Management Support	BPA	BAE Systems, Rockville MD	26.600	6.750	10/02	2.133	10/03	2.115	10/04	Cont.	Cont.	
	WR/RCP	Miscellaneous	6.856	0.549	various	0.401	various	0.398	various	Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
SBIR Assessment										Cont.	Cont.	
Subtotal Management			33.456	7.299		2.534		2.513		Cont.	Cont.	
Remarks:												
Total Cost			1,100.751	302.946		205.273		203.629		Cont.	Cont.	
Remarks:												

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R-1 SHOPPING LIST - Item No. 106

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;BA-5</b>	0604307N/AEGIS COMBAT SYSTEM ENGINEERING				K1447/K9065/K9066/K9067 Surface Combatant Com				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
<b>6 Phase III</b>									
CP-1	2Q								
CP-2	2Q								
CP-3	4Q								
CP Delivery		1Q							
CP Deployment Cert			1Q						
<b>7 Phase I</b>									
DDG 91 PTC	2Q								
EA	4Q								
Demo		3Q							
Land Based SPY-1D(V) DT/OT		4Q							
CP Delivery			1Q						
SPY-1D(V) Techeval			4Q						
SPY-1D(V) Opeval				1Q					
Deployment Cert				1Q					
<b>7 Phase I Refresh</b>									
Equipment IPR	3Q								
EA			4Q						
CP IPR			1Q						
Demo					1Q				
DDG 103 ALO					4Q				
<b>7 Phase I C</b>									
IPR	4Q								
CDR		3Q							
Demo				3Q					
PDR				3Q					
CDR					3Q				
Demo							3Q		
<b>7 Phase II</b>									
Increment 0		2Q - 4Q	1Q						
Increment 1		4Q	1Q - 4Q	1Q - 3Q					
Increment 2				2Q - 4Q	1Q - 3Q				
Increment 3					3Q - 4Q	1Q - 4Q			
Increment 4						4Q	1Q - 4Q	1Q - 2Q	
Increment 5								1Q - 4Q	
<b>5.4</b>									
IDR	3Q								
FDR	4Q								
IPR		4Q							

R-1 SHOPPING LIST - Item No. 106

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 13 of 45)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>9.001</b>	<b>4.257</b>	<b>0.460</b>	<b>4.419</b>	<b>4.505</b>	<b>4.587</b>	<b>4.670</b>	<b>4.570</b>
RDT&E Articles Qty								

**A. 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-012-99 dated Oct 1999 and subsequent updates. The modifications will be introduced into CG 47 Class and DDG 51 Class ships.

The increase in FY 2002 is due to congressional plus-ups (K9064/AEGIS Operational Readiness - \$3.905M & K9068/Traveling Wave Tube Circuit - \$.981M).

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Radar System Engineering Studies	2.887	3.396	0.460	3.335
RDT&E Articles Quantity				

Accomplishments/Planned: Perform system engineering studies to analyze threats and propose upgrades to meet threats. Perform system engineering studies to enable the AEGIS Weapon System to meet the evolving threat and improve performance in various environments. These studies will lead to detailed equipment designs and/or lead to proposed computer program upgrades. Current efforts include Automatic Adaptive Mode Control Operation (AAMCO) improvements, Enhanced Ultra Low Threat, Surface Search for AN/SPY-1D(V), and Dynamic Test Target Enhancements.

	FY 02	FY 03	FY 04	FY 05
Electronic Countermeasures Analysis (ECMA)	0.860	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments/Planned: Electronic Countermeasures Analysis (ECMA) upgrade effort and develop design package for transition to production. Incorporate COTS Adaptive Computing capability developed by DARPA on the System Level Applications of Adaptive Computing (SLAAC) Program and integrate into existing AN/SPY-1B/D Radar Systems. Application of this technology results in significant reduction in the number of modules used in the Electronic Countermeasure Analyzer Frame, addresses emerging DMS issues, and enables easier upgrade of the ECMA frame (via firmware download) to address emerging threats. This effort has been terminated because of the reduction in FY04 funds.

	FY 02*	FY 03	FY 04	FY 05
Operational Readiness Test System	4.273	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Operational Readiness Test System (ORTS) design efforts and support ECMA transition to production. Design, development, and engineering for ORTS Upgrade for Baseline 3, 4, and 5. Also, determine Fault Detection/Fault Isolation (FD/FI) requirements associated with ECMA Upgrade efforts.

\* Congressional Plus-up (K9064/\$3.905M) - the ORTS Congressional plus-up is to be used to develop a replacement for the ORTS TAC-3 & TAC-4 systems currently onboard CG 59-64 and DDG 79-90.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
	FY 02*	FY 03	FY 04	FY 05
Traveling Wave Tubes (K9068)	0.981	0.000	0.000	0.000
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px;"> <p>Accomplishments: * Congressional Plus-up (K9064/\$0.981M) - the Traveling Wave Tube Circuit Congressional plus-up is to be used for manufacturing of Ring Bar assemblies in the 10KW Traveling Wave Tube.</p> </div>				
	FY 02	FY 03	FY 04	FY 05
AWS Warfighting Improvements	0.000	0.861	0.000	1.084
RDT&E Articles Quantity				
<div style="border: 1px solid black; min-height: 60px;"> <p>Planned: AWS Warfighting Improvements tasking. Perform system engineering to adapt AWS forward fit solution to in-service ships via backfit to allow them to counter the evolving threat. Efforts already identified include AN/SPY-1D(V) TIP Testability.</p> </div>				



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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		9.218	4.352	4.443	4.528
Current BES/President's Budget: (FY04/05 Pres Controls)		9.001	4.257	0.460	4.419
Total Adjustments		-0.217	-0.095	-3.983	-0.109
Summary of Adjustments					
Congressional program reductions					
Congressional rescissions					
SBIR/STTR Transfer		-0.157			
Economic Assumptions		-0.060	-0.095	-0.018	-0.109
Reprogrammings				-3.965	
Congressional increases					
Subtotal		-0.217	-0.095	-3.983	-0.109
Schedule:					
Technical:					
Funding will be utilized to update the Aegis weapons systems to keep pace with the evolving threat.					

R-1 SHOPPING LIST - Item No. 106

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN LI2020 - CG Conversion*			194.44	439.033	469.17	447.437	679.381	691.534	Cont.	Cont.
SCN LI2122 - DDG 51*	3227.285	2668.076	3198.311	3440.605	193.635	292.294				13,020.206
OPN LI5246 - AEGIS Supt. Eqp	154.107	158.04	105.227	105.205	104.708	105.291	109.406	106.121	Cont.	Cont.
RDT&E,N 0603382N - Advanced Combat Sys	3.111	3.276	3.394	3.346	1.918	0.981	0.985	0.999	Cont.	Cont.

\* TOA excludes outfitting and post delivery.

**E. 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.

**F. MAJOR PERFORMERS:**

Lockheed Martin, Moorestown, NJ (Combat System Design Agent/Prime Contractor) - 12/96  
CDSA Dam Neck, Virginia Beach, VA (Lifetime Support Engineering Agent)

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

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N/AEGIS COMBAT SYSTEM ENGINEERING			K1776/K9064/K9068/Surface Combatant Weapon Sys Mods						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	23.354	2.123		0.460		2.354		Cont.	Cont.	
Systems Engineering	WR/RCP	Naval Laboratories	1.680	0.700		0.000		0.720		Cont.	Cont.	
Systems Engineering	WR/RCP	NSWC/DD	0.050	0.325		0.000		0.350		Cont.	Cont.	
Systems Engineering		Wright Patterson AFB	0.250	0.148		0.000		0.145		Cont.	Cont.	
Systems Engineering		CDSA Dam Neck	3.905	0.000		0.000		0.000		Cont.	Cont.	
Systems Engineering		NSWC/Crane	0.981	0.000		0.000		0.000		Cont.	Cont.	
Systems Engineering		Miscellaneous	2.032	0.661		0.000		0.850		Cont.	Cont.	
Award Fees			0.996	0.000		0.000		0.000		Cont.	Cont.	
Subtotal Product Development			33.248	3.957		0.460		4.419		Cont.	Cont.	
Remarks:												
Support	WR/RCP	Miscellaneous	1.060	0.300		0.000		0.000		Cont.	Cont.	
Subtotal Support			1.060	0.300		0.000		0.000		Cont.	Cont.	
Total Cost:			34.308	4.257		0.460		4.419		Cont.	Cont.	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME															
<b>RDT&amp;E, N / BA-5</b>								0604307N/AEGIS COMBAT SYSTEM ENGINEERING								K1776/K9064/K9068/Surface Combatant Weapon Sys Mods															
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009		
	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
<b>AWS Warfighting Improvements</b>																															
TIP ADR Firmware Coding																															
TIP ADR Firmware Test																															
TIP Phase I completion & demo																															
ATS Demo																															
COR Review																															
<div style="display: flex; justify-content: space-between;"> <span>Quarterly</span> <span>Quarterly</span> </div>																															
<b>ECMA Enhancements</b>																															
Lab Demo - COTS concept																															
Format Design Document																															
Proof of Concept Demo																															
In Process Review																															
Environ Qual Completion																															
Final Demo																															
COR Review																															
<div style="display: flex; justify-content: space-between;"> <span>Monthly</span> <span>Quarterly</span> </div>																															
<b>Radar System Engineering Studies</b>																															
SPY-1D(V) Radar Functional Assessment																															
AN/SPY-1 Working Group																															
Technical Exchange Meeting																															
Contract Review																															
Review spec change, test																															
Technical/meeting reports																															
Progress/status reports																															
Radar Roadmap review																															
<div style="display: flex; justify-content: space-between;"> <span>Quarterly</span> <span>As Required</span> <span>As Required</span> <span>As Required</span> <span>Quarterly</span> <span>Upon Release</span> <span>Upon Release</span> <span>As Required</span> <span>Quarterly</span> <span>Annually</span> <span>Annually</span> <span>Annually</span> <span>Annually</span> <span>Annually</span> </div>																															
<div style="display: flex; justify-content: space-between;"> <span>DT/OT (7/03) Assessment &amp; Corrections</span> <span>OPEVAL (11/04) Assessment &amp; Corrections</span> </div>																															

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail:						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>AWS Warfighting Improvements</b>								
TIP ADR Firmware Coding	3 Q							
TIP ADR Firmware Test, Software Mode 1 Test	4 Q							
TIP Phase 1 completion and demonstration		2 Q						
ATS Demonstration				4 Q				
Contracting Officer Representative (COR) Review	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
<b>ECMA Enhancements</b>								
Lab demonstration - COTS concept								
Format Design Document	1 Q							
Proof of Concept Demonstration								
In Process Reviews	Monthly							
Environmental Qualification Completion								
Final Demonstration								
Contracting Officer Representative (COR) Review	1-4 Q							
<b>Radar Systems Engineering</b>								
SPY-1D(V) Radar Functional Assessment				4Q	4Q			
AN/SPY-1 Working Group Meeting	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Technical Exchange Meetings	As required	As required	As required	As required	As required	As required	As required	As required
Contract Review	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Review specification changes, test procedures	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release
Technical/meeting reports	As required	As required		As required	As required	As required	As required	As required
Progress/status reports	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Radar Roadmap review and update	Annually	Annually		Annually	Annually	Annually	Annually	Annually

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 21 of 45)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR			
COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>29.311</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty	<b>Not Applicable</b>							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The Solid State SPY Radar is being developed to support Theater Air and Missile Defense requirements as part of a next generation cruiser, CG(X), 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 Ballistic Missile Defense and Self Defense against air and surface threats. For the BMD capability, increased radar sensitivity and bandwidth over the current SPY-1 system is needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges. For the Ballistic Missile Defense and Self Defense capability, increased sensitivity and clutter rejection capability is needed to detect, react to, and engage stressing Very Low Observable /Very Low Flyer (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.

\* FY 2003 includes:

- Congressional plus-up for Solid State SPY-1E Multi-Mission Radar
- Congressional plus-up for Silicon Carbide MMIC Producibility Program
- Transfer of Missile Defense Agency funds to Navy for S-Band Radar Research

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
S-Band Radar Development		22.000		
RDT&E Articles Quantity				

- 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), Transmit/Receiver (T/R) modules, and Thermal management and cooling technologies, line array, environmental demonstration array.

	FY 02	FY 03	FY 04	FY 05
Advanced Technology MMIC Development		1.467		
RDT&E Articles Quantity				

- Improve the producibility (i.e. yield and cost) of high power Silicon Carbide (SiC) MMIC power amplifiers.
- Non recurring engineering design of high power SiC MMICs. Recurring fabrication to support future capability radar demonstrations

	FY 02	FY 03	FY 04	FY 05
Field Activities		5.844		
RDT&E Articles Quantity				

- 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		4.971		
Current BES/President's Budget: (FY04/05 Pres Controls)		29.311		
Total Adjustments	0.000	24.340	0.000	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments		-0.493		
SBIR/STTR Transfer				
Economic Assumptions		-0.167		
Reprogrammings				
Congressional increases		25.000		
Subtotal	0.000	24.340	0.000	0.000

Schedule:

Schedule changes due to funding changes associated with Program Element 0603882C.

Technical:

Not Applicable.

Funding:

FY 2003 includes:

- Congressional add for Solid State SPY-1E Multi-Mission Radar
- Congressional add for Silicon Carbide MMIC Producibility Program
- Transfer of Missile Defense Agency funds for S-Band Radar Research

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**Exhibit R-2a, RDTEEN Project Justification**  
(Exhibit R-2a, page 24 of 45)



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
P.E. 0301327N (Missile and Space Technical Collection)	51.1	71.0	81.0	57.5	50.0	51.1	52.2	Cont.	Cont.	
 <b>E. ACQUISITION STRATEGY:</b>										
<p>The Solid State SPY Radar Program was awarded to Lockheed Martin in June 1999 based upon a competitive selection resulting from a Broad Agency Announcement (BAA). This program is for the competition of a prototype radar system. A milestone decision for EDM will be based upon successful completion of this prototype phase.</p>										
 <b>F. MAJOR PERFORMERS:</b>										
<p>Lockheed Martin (Moorestown, New Jersey) - 1999</p>										

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K3044 / K9223 / K9225 - SOLID STATE SPY RADAR						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
S-Band Radar Development	SS/CPAF	Lockheed Martin (NJ)	N/A	22.000	01/03	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Advanced Technology MMIC Dev	TBD	CREE	N/A	1.200	01/03	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Program Management Support	TBD	Various	N/A	6.111	N/A	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Subtotal Product Development			0.000	29.311		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Development Support												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K3044 / K9223 / K9225 - SOLID STATE SPY RADAR						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	29.311		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 27 of 45)



# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;BA-5</b>	0604307N / AEGIS COMBAT SYSTEM ENGINEERING				K3044 / K9223 / K9225 - SOLID STATE SPY RADAR				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
<b>Prototype Phase</b>	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q			
<b>Radar System Development</b>									
System Design Review (SDR)	3Q								
Line Array Demonstration Test		3Q							
Preliminary Design Review (PDR)			1Q						
Critical Design Review (CDR)				1Q					
In-Process Review (IPR)					1Q	1Q			
Delivery						4Q			
<b>Software Delivery</b>									
Preliminary Design Review (PDR)			1Q						
Critical Design Review (CDR)				1Q					
Coding Complete						2Q			
<b>Test &amp; Evaluation</b>									
Test Readiness Review (TRR)						4Q			
Land Based Test						4Q	1Q-4Q	1Q-3Q	
<b>Deliverables</b>									
Prototype						4Q			

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 29 of 45)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning			
COST (\$ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>2.445</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty	<b>Not Applicable</b>							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Congressional plus-up for development, demonstration, and validation of new initiatives to reduce the manning on Arleigh Burke (DDG-51) class destroyers. Specifically this effort will include the design, installation, testing and evaluation of a prototype personnel locator system integrated with DDG-51 class Automated Common Diagrams (ACDs).

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
S-Band Radar Development		2.445		
RDT&E Articles Quantity				

Accomplishments: N/A

Planned: Funds design, installation, testing and evaluation of a prototype personnel locator system integrated with DDG-51 class Automated Common Diagrams (ACDs).

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000		
Current BES/President's Budget: (FY04/05 Pres Controls)		2.445		
Total Adjustments	0.000	2.445	0.000	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments				
SBIR/STTR Transfer				
Economic Assumptions		-0.055		
Reprogrammings				
Congressional increases		2.500		
Subtotal	0.000	2.445	0.000	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

Funding:

Not Applicable.

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										

**E. ACQUISITION STRATEGY: \***

Program office intends to use existing DDG-51 class Lead Yard Services contract with Bath Iron Works (CPAF) and existing delivery orders (cost).

**F. MAJOR PERFORMERS:**

Bath Iron Works

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

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K9221/DDG-51 Optimized Manning						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering												
	CPAF	BIW/Bath, Me		1.945	02/03							
		Various		0.500								
Award Fees												
Subtotal Product Development			0.000	2.445		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Support												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K9221/DDG-51 Optimized Manning						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Program Management Support												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	2.445		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

**UNCLASSIFIED**

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2003</b>												
<b>Not Applicable</b>																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>					PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING										PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail <b>Not Applicable</b>					DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>Release of funds</b>		2Q						
Preliminary Design Review (PDR)		2Q						
Critical Design Review (CDR)		3Q						
<b>Software Development</b>								
Hardware Development		3Q-4Q						
<b>Test &amp; Evaluation</b>								
Prototype Shipboard Installation			1Q					
Deliverables								
<b>Progress Reports (monthly)</b>								
Provisioning Technical Documentation (PTD)								
Shipset Personnel Locator System Hardware								
Modified Automated Common Diagram Software								
Modified Technical Manuals								

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9222/ Knowledge Projection			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>1.467</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty	<b>Not Applicable</b>							

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Congressional plus-up to support NAVSEA Crane, EG&G Technical Services, Inc., Purdue University, and Indiana University in a collaborative alliance to develop a new system to remotely monitor Navy ships (systems and equipment), enable technicians to repair and maintain increasingly complex equipment utilizing equipment failure characteristics, related repair knowledge and off-ship technical experts via the DoD/Navy communications systems.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K9222/ Knowledge Projection
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Knowledge Projection		1.467		
RDT&E Articles Quantity				

Accomplishments: N/A

Planned: Begin development of a new system to remotely monitor Navy ships (systems and equipment), enable technicians to repair and maintain increasingly complex equipment utilizing equipment failure characteristics, related repair knowledge and off-ship technical experts via the DoD/Navy communications systems.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING	PROJECT NUMBER AND NAME K9222/ Knowledge Projection

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000		
Current BES/President's Budget: (FY04/05 Pres Controls)		1.467		
Total Adjustments	0.000	1.467	0.000	0.000

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments				
SBIR/STTR Transfer				
Economic Assumptions		-0.033		
Reprogrammings				
Congressional increases		1.500		
Subtotal	0.000	1.467	0.000	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

Funding:

Not Applicable.

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9222/ Knowledge Projection				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
 <b>E. ACQUISITION STRATEGY: *</b>										
Utilize Congressional Adds in FY's 2002 and 2003 to develop Navy system specification for Knowledge Projection. Develop communication and computer equipment applications and interfaces that will enable highly efficient communication (knowledge parity) between sailor and experts on condition and repair of critical ship systems and equipments. Provide final system specification to resource sponsors for requirement consideration.										
 <b>F. MAJOR PERFORMERS:</b>										
NSWC Crane - Project Management for USN										
EG&G Technical Services - Project Coordination among IU and PU w/Navy organizations										
Indiana University-Business Case Development										
Purdue University-System Software and Application developers and Technology Roadmapping										
 <b>* Not required for Budget Activities 1,2,3, and 6</b>										

R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K9222/ Knowledge Projection						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	CPFF	EG&G Technical Services		1.000	02/03							
Award Fees												
Subtotal Product Development			0.000	1.000		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Support												
Navy Activity Funding		NSWC Crane		0.467								
Subtotal Support			0.000	0.467		0.000		0.000		0.000	0.467	Cont.
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604307N / AEGIS COMBAT SYSTEM ENGINEERING			K9222/ Knowledge Projection						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Program Management Support												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	1.467		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

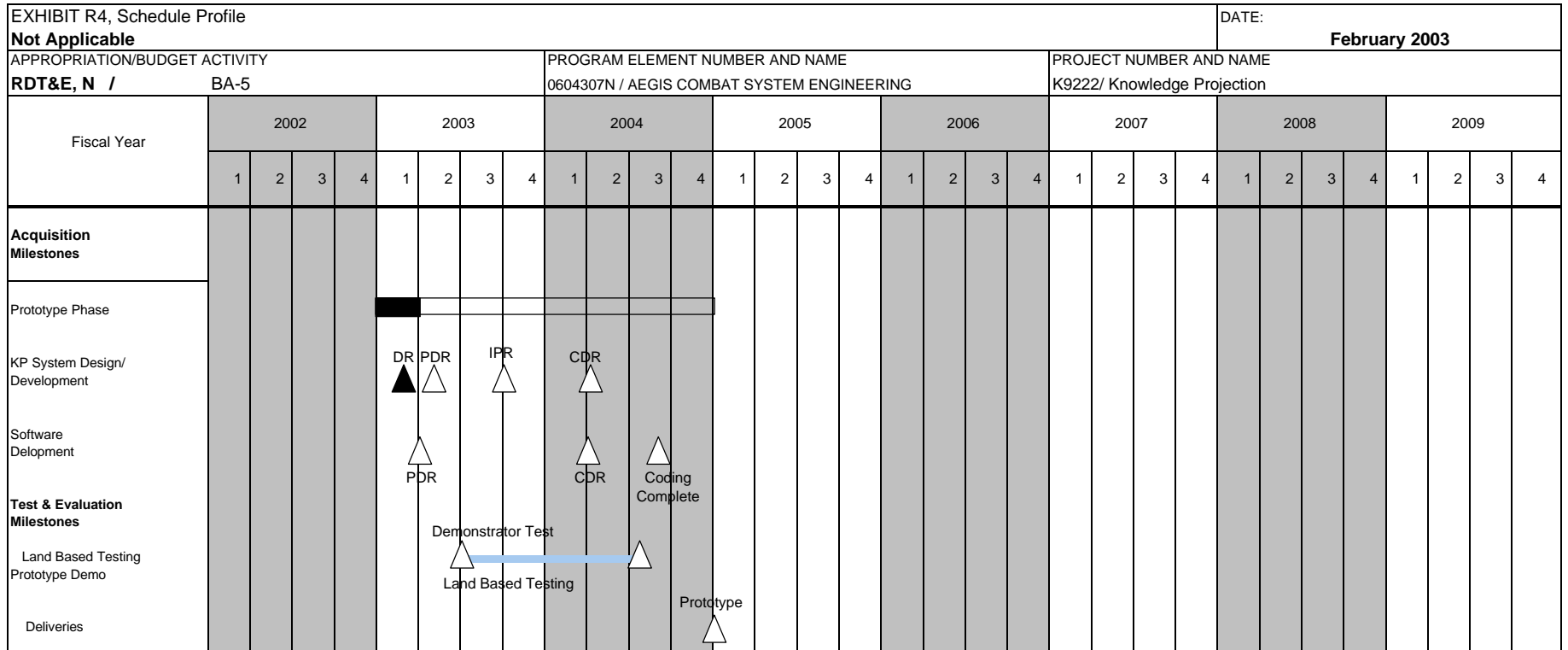
R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 43 of 45)

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CLASSIFICATION:



R-1 SHOPPING LIST - Item No. 106

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail <b>Not Applicable</b>						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9222/ Knowledge Projection			
Schedule Profile		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>Prototype Phase</b>			1-4Q	1-4Q					
<b>KP System Design</b>			1-4Q	1-2Q					
CASE BASED REASONING SYSTEM									
HUMAN MACHINE INTERFACE									
HIGH PERFORMANCE KNOWLEDGE BASE									
DATA MINING TOOL SET									
<b>Software Delivery</b>									
PRELIMINARY DESIGN REVIEW			1Q						
CRITICAL DESIGN REVIEW				1Q					
<b>Test &amp; Evaluation</b>									
LAND BASED ASSESSMENT			2Q	1Q					
PROTOTYPE DEMO			3Q	2Q					
<b>Deliverables</b>									
PROTOTYPE SYSTEM				4Q					

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>					R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
Total PE Cost	<b>0.947</b>	<b>9.909</b>	<b>7.989</b>	<b>8.659</b>	<b>8.894</b>	<b>10.724</b>	<b>10.928</b>	<b>11.131</b>	<b>0.000</b>	<b>69.181</b>
LPD 17 Class Systems Integration/22283	<b>0.947</b>	<b>9.909</b>	<b>7.989</b>	<b>8.659</b>	<b>8.894</b>	<b>10.724</b>	<b>10.928</b>	<b>11.131</b>	<b>0.000</b>	<b>69.181</b>
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 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 &amp; Evaluation (LFT&amp;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 2002 Accomplishment:</p> <ul style="list-style-type: none"> <li>- (U) (.947) Continued Naval Expeditionary Warfare Systems Engineering efforts. Continued Live Fire Test and Operational Evaluation efforts.</li> </ul>										

R-1 SHOPPING LIST - Item No. 107-1 of 107-4

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 1 of 4)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>FEBRUARY 2003</b>																																																		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>						R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N																																																		
<p>FY 2003 Plan:            - (U) (9.909) Continue Naval Expeditionary Warfare Systems Engineering efforts. Continue Live Fire Test and Operational Evaluation efforts. Complete initial Warfighting Performance Improvement Configuration Definition Package. Conduct vulnerability assessments. Procure expendable test rounds for required at-sea tests.</p> <p>FY 2004 Plan:            - (U) (7.989) Continue Naval Expeditionary Warfare Systems Engineering efforts. Continue Live Fire Test and Operational Evaluation and vulnerability assessment efforts. Development of system upgrades and improvements. Plan for at-sea tests.</p> <p>FY 2005 Plan:            - (U) (8.659) Continue Naval Expeditionary Warfare Systems Engineering efforts. Continue Live Fire Test and Operational Evaluation and vulnerability assessment efforts. Continue development of system upgrades and improvements. Plan for at-sea tests.</p> <p>B. Program Change Summary:</p> <table border="0"> <tr> <td></td> <td>FY 2002</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> <td></td> </tr> <tr> <td>(U) FY 2003 President's Budget</td> <td>0.992</td> <td>10.133</td> <td>10.384</td> <td>10.549</td> <td></td> </tr> <tr> <td>(U) FY 2004/2005 President's Budget Submit:</td> <td>0.947</td> <td>9.909</td> <td>7.989</td> <td>8.659</td> <td></td> </tr> <tr> <td>Total Adjustments</td> <td>-0.045</td> <td>-0.224</td> <td>-2.395</td> <td>-1.890</td> <td></td> </tr> </table> <p>Funding: FY02 change reflects SBIR adjustment (\$0.015M), BTR adjustment (\$0.020M) and rescissions (\$0.010M).            FY03 change reflects Section 8135 &amp; 8109 economic assumptions and inflation savings \$0.224M reduction .            FY04 change reflects a \$2.395M programmatic adjustment and improvements and changes in inflation assumptions.            FY05 change reflects a \$1.890M programmatic adjustment and improvements and changes in inflation assumptions.</p> <p>C. Other Program Funding Summary (\$millions)</p> <table border="0"> <tr> <td></td> <td>FY 2002</td> <td>FY 2003</td> <td>FY 2004</td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> <td>FY 2008</td> <td>FY 2009</td> <td>Complete</td> <td>otal Cost</td> </tr> <tr> <td>SCN Line 3036</td> <td>4,088.7 and Prior</td> <td>584.4</td> <td>1,192.0</td> <td>0.0</td> <td>2,146.6</td> <td>1,218.5</td> <td>1,275.7</td> <td>1,264.9</td> <td>1622.0</td> <td>13,392.9</td> </tr> </table>												FY 2002	FY 2003	FY 2004	FY 2005		(U) FY 2003 President's Budget	0.992	10.133	10.384	10.549		(U) FY 2004/2005 President's Budget Submit:	0.947	9.909	7.989	8.659		Total Adjustments	-0.045	-0.224	-2.395	-1.890			FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Complete	otal Cost	SCN Line 3036	4,088.7 and Prior	584.4	1,192.0	0.0	2,146.6	1,218.5	1,275.7	1,264.9	1622.0	13,392.9
	FY 2002	FY 2003	FY 2004	FY 2005																																																				
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SCN Line 3036	4,088.7 and Prior	584.4	1,192.0	0.0	2,146.6	1,218.5	1,275.7	1,264.9	1622.0	13,392.9																																														

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Exhibit R-3 Cost Analysis (page 1)											DATE: <b>FEBRUARY 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER							
<b>RDT &amp; E, NAVY/BA-5</b>			<b>PE#0604311N - 22283</b>				LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N							
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	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Systems Engineering and Integration	Various	Various	0.147		3.159		6.164		3.373		27.977	40.820		
Subtotal Product Development			0.147		3.159		6.164		3.373		27.977	40.820		
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: <b>FEBRUARY 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER						
<b>RDT &amp; E, NAVY/BA-5</b>			<b>PE#0604311N - 22283</b>				LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N						
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	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E	Various	Various	0.800		6.750	11/02	1.825	11/03	5.286	11/04	13.700	28.361	
Subtotal T&E			0.800		6.750		1.825		5.286		13.700	28.361	
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			0.947		9.909		7.989		8.659		41.677	69.181	
Remarks:													

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-05</b>					R-1 ITEM NOMENCLATURE 0604312N Tri-Service Standoff Attack Missile (TSSAM)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	1.871	14.613	25.137	27.162	21.272	14.465	14.729	14.991
A2242 Joint Air to Surface Standoff Missile (JASSM)	1.871	14.613	25.137	27.162	21.272	14.465	14.729	14.991
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> The Joint Air to Surface Standoff Missile (JASSM) program is a 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 EMD budget covers only the cost of Navy unique testing for the Carrier Operability KPP (FY02) and integration aboard the Navy F/A-18E/F including mission planning (FY03 and outyears). FY04 specific tasks are centered on completing JASSM wind tunnel tests with flight testing (loads and flying qualities tests) to begin in mid FY04. F/A-18E/F OFP (H4) implementation will begin in FY05 and run concurrently with flight test.								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)				PROJECT NUMBER AND NAME A2242 JASSM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>1.871</b>	<b>14.613</b>	<b>25.137</b>	<b>27.162</b>	<b>21.272</b>	<b>14.465</b>	<b>14.729</b>	<b>14.991</b>
RDT&E Articles Qty		<b>5</b>	<b>6</b>	<b>2</b>	<b>4</b>			
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>The Joint Air to Surface Standoff Missile (JASSM) program is a 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 EMD budget covers only the cost of Navy unique testing for the Carrier Operability KPP (FY02) and integration aboard the Navy F/A-18E/F including mission planning (FY03 and outyears). FY04 specific tasks are centered on completing JASSM wind tunnel tests with flight testing (loads and flying qualities tests) to begin in mid FY04. F/A-18E/F OFP (H4) implementation will begin in FY05 and run concurrently with flight test.</p>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)	PROJECT NUMBER AND NAME A2242 JASSM

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
JASSM EMD/ Carrier Operability	1.871	0.000	0.000	0.000
RDT&E Articles Quantity				

Funding for Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements. Continued Government funding for Carrier Operability and ship suitability testing (Qual Navy Load Adapter, complete MIL-STD 461E EMI testing) in support of MS III in FY02.

	FY 02	FY 03	FY 04	FY 05
F/A-18E/F / JASSM Integration	0.000	14.613	25.137	27.162
RDT&E Articles Quantity		5	6	2

F/A-18E/F integration to include Wind Tunnel tests, Carrier Suitability, Noise and Vibrations, Flying Qualities, Separation, E3, Performance Flight tests, Structural tests and purchase of test assets. Perform systems engineering, mission support, and Integrated Logistics Support (ILS) in order to achieve a successful OT and IOC. Integration on the F/A-18E/F includes aircraft Operational Flight Program (OFP) development, software development, test, verification and validation to implement the JASSM missile in software build H4. Also includes Mission Planning development for the JASSM missile on the Joint Mission Planning System (JMPS).

	FY 02	FY 03	FY 04	FY 05

R-1 SHOPPING LIST - Item No. 108

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-05</b>	0604312N Tri-Service Standoff Attack Missile (TSSAM)	A2242 JASSM			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget		1.929	14.943	25.869	27.799
Current President's Budget		1.871	14.613	25.137	27.162
Total Adjustments		-0.058	-0.330	-0.732	-0.637
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.087		
Congressional rescissions		-0.004			
SBIR/STTR Transfer		-0.009			
Economic Assumptions		-0.005	-0.243	-0.638	-0.612
Reprogrammings		-0.040			
Other Navy/OSD Adjustments				-0.094	-0.025
Congressional increases					
Subtotal		-0.058	-0.330	-0.732	-0.637
(U) Schedule:					
Milestone III slipped from 2Q/03 to 1Q/04 due to a 10-month extension of the EMD period.					
(U) Technical:					
Not Applicable.					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>PROGRAM ELEMENT NUMBER AND NAME</b>				<b>PROJECT NUMBER AND NAME</b>				
<b>RDT&amp;E, N / BA-05</b>		0604312N Tri-Service Standoff Attack Missile (TSSAM)				A2242 JASSM				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
USAF, PAAF	41.988	50.095	101.101	145.401	148.578	197.633	303.200	309.200	1,210.395	2,507.591
USN, WPN	0	0	0	0	0	19.189	70.183	70.685	145.823	320.300
USAF, RDT&E U.S. Air Force P.E. 0207325F Joint Air to Surface Standoff Missile (JASSM)	82.793	51.047	31.216	45.897	61.640	13.637	0.000	0.000	0.000	
<b>(U) E. ACQUISITION STRATEGY:</b>										
<p>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\$). 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&amp;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&amp;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&amp;E program according to the scope of the EMD contract. The Air Force has been funded in FY04 to begin development for an extended range version of JASSM.</p>										

R-1 SHOPPING LIST - Item No. 108

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604312N Tri-Service Standoff Attack Missile (TSSAM)			A2242 JASSM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JASSM Development	CPAF	Lockheed	2.606								2.606	2.606
AoA Support	Misc	Various	9.343								9.343	9.343
Aircraft Integration	WX	PMA-265	0.000	2.671	12/02	7.878	12/03	4.021	12/04	6.951	21.521	
Test Assets	CPAF	Lockheed	0.000	4.000	02/03	2.400	12/03	6.600	12/04	2.000	15.000	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees	CPAF	Lockheed	0.402								0.402	0.402
Subtotal Product Development			12.351	6.671		10.278		10.621		8.951	48.872	
Remarks:												
Weapon Systems Engineering	CPAF	Lockheed	0.632	4.500	02/03	3.200	12/03	3.800	12/04	6.800	18.932	18.932
JMPS Software Development	Misc	Various	0.000	0.000		1.500	12/03	5.500	12/04	8.500	15.500	
Government Engineering Support	Misc	Various	1.033	1.659	12/02	2.217	12/03	2.630	12/04	10.842	18.381	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			1.665	6.159		6.917		11.930		26.142	52.813	
Remarks:												

R-1 SHOPPING LIST - Item No. 108

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-05</b>			0604312N Tri-Service Standoff Attack Missile (TSSAM)				A2242 JASSM					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD & WD	0.000	0.800	12/02	6.534	12/03	2.930	12/04	13.999	24.263	
Operational Test & Evaluation	Misc	Various	0.050	0.000		0.000		0.000		3.400	3.450	
											0.000	
											0.000	
											0.000	
Award Fees											0.000	
Subtotal T&E			0.050	0.800		6.534		2.930		17.399	27.713	
Remarks:												
Contractor Engineering Support	RX	NAWCAD	0.161	0.360	12/02	0.360	12/03	0.360	12/04	5.720	6.961	
Program Management Support	Misc	Various	0.053	0.598	12/02	1.023	12/03	1.296	12/04	6.700	9.670	
Travel	WX	NAWCAD	0.000	0.025	12/02	0.025	12/03	0.025	12/04	0.545	0.620	
											0.000	
											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.214	0.983		1.408		1.681		12.965	17.251	
Remarks:												
Total Cost			14.280	14.613		25.137		27.162		65.457	146.649	
Remarks:												

R-1 SHOPPING LIST - Item No. 108

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>								PROGRAM ELEMENT NUMBER AND NAME 0604312N Tri-Service Standoff Attack Missile (TSSAM)								PROJECT NUMBER AND NAME A2242 JASSM																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>	▲ LRIP							▲ MS III	★ FRP																								
<b>Test &amp; Evaluation Milestones</b>	■ EMD																																
Block 1 - Lot 1	■ DT/OT		■ OT&E																														
Block 1a - Lot 2	■ DT/OT				■ OT Rpt																												
<b>Production Milestones</b>	▲							▲				▲				▲				▲				▲				▲				▲	
LRIP Lot 1 FY 02	76 - Air Force																																
LRIP Lot 2 FY 03					100 - Air Force																												
FRP Lot 3 FY 04									250 - Air Force																								
Lot 4 FY05													360 - Air Force																				
Lot 5 FY06																	360 - Air Force																
Lot 6 FY07																					326 - AF/30 - USN												
Lot 7 FY08																					333 - AF/80 - USN												
Lot 8 FY09																																	
<b>Navy Specific Milestones</b>																																	
F/A-18E/F Integration	Ground Test/Wind Tunnel								F/A-18E/F Integration								Flight Test								OT								
H4 OFP Development																	H4 Development / V&V																
JMPS Mission Planning									JMPS S/W Development / V&V								OT								Product Improvements Phase								

R-1 SHOPPING LIST - Item No. 108

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

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-05</b>	0604312N Tri-Service Standoff Attack Missile (TSSAM)				A2242 JASSM			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Start Low-Rate Initial Production I (LRIP Lot 1)	2Q							
Block 1 Combined DT/OT	1Q-2Q							
Block 1 OT	2Q-4Q							
Block 1a Combined DT/OT	1Q-4Q	1Q						
Block 1a OT		2Q						
Start Low-Rate Initial Production II (LRIP Lot 2)		1Q						
Low-Rate Initial Production I Delivery		2Q-4Q	1Q-2Q					
Low-Rate Initial Production II Delivery			2Q-4Q	1Q				
Milestone III (MS III)			1Q					
IOC								
Required Assets Available (RAA) B-52		4Q						
Required Assets Available (RAA) F-16			4Q					
Full Rate Production (FRP) Decision			1Q					
First Deployment (Air Force)		4Q						
First Deployment (Navy)							1Q	
Lot 4 Award				1Q				
Lot 4 Delivery					2Q-4Q	1Q		
Lot 5 Award					1Q			
Lot 5 Delivery						2Q-4Q	1Q	
Lot 6 Award						1Q		
Lot 6 Delivery							2Q-4Q	1Q
Lot 7 Award							1Q	
Lot 7 Delivery								2Q-4Q
Lot 8 Award								1Q
Navy Specific Schedule Profile								
F/A-18E/F Integration		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q		
Ground Test/Wind Tunnel		2Q-4Q	1Q-4Q					
Flight Test			4Q	1Q-4Q	1Q-4Q	1Q		
F/A-18 Operational Flight Program (H4)				2Q-4Q	1Q-4Q	1Q		
Joint Mission Planning Program (JMPS)			2Q-4Q	1Q-4Q	1Q-4Q	1Q		
JASSM / F/A-18E/F OT						2Q-4Q		
JASSM / F/A-18E/F IOC							1Q	
Product Improvements Phase							1Q-4Q	1Q-4Q

R-1 SHOPPING LIST - Item No. 108

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 9 of 9)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-05</b>					R-1 ITEM NOMENCLATURE 0604329N Small Diameter Bomb (SDB)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		1.945						
A3072 Small Diameter Bomb (SDB)		1.945						
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>Small Diameter Bomb (SDB) is a 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>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604329N Small Diameter Bomb (SDB)				PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>1.945</b>						
RDT&E Articles Qty								
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>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>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604329N Small Diameter Bomb (SDB)	PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
EMD/ Carrier Operability		1.945		
RDT&E Articles Quantity				

Monitor design definition of SDB and carriage system for applications to future platforms (e.g., JSF).

	FY 02	FY 03	FY 04	FY 05

	FY 02	FY 03	FY 04	FY 05

R-1 SHOPPING LIST - Item No. 109

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-05</b>	0604329N Small Diameter Bomb (SDB)	A3072 Small Diameter Bomb (SDB)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget		0.000	1.989	0.000	0.000
Current BES/President's Budget		0.000	1.945	0.000	0.000
Total Adjustments		0.000	-0.044	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.012		
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions			-0.032		
Reprogrammings					
SPONSOR/FMB/NAVAIR Adjustments					
Congressional increases					
Subtotal		0.000	-0.044	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604329N Small Diameter Bomb (SDB)	PROJECT NUMBER AND NAME A3072 Small Diameter Bomb (SDB)
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
RDT&E										
U.S. Air Force P.E. 0604329F (SDB)	38.753	53.118	126.447	67.685	47.942	15.421	0.000	0.000	0.000	377.084
Missile Procurement										
U.S. Air Force P.E. 0207327F				38.379	96.933	184.388	180.593	194.513	1,395.505	2090.311
SDB Qty				158	512	1,200	1,340	1,508	19,282	24000

**(U) E. ACQUISITION STRATEGY:**

Monitor design definition of SDB and carriage system for applications to future platforms (e.g., JSF). No Navy RDT&E requirements for Phase I on existing platforms.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604329N Small Diameter Bomb (SDB)			A3072 Small Diameter Bomb (SDB)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Aircraft Compatibility/Design Study	WX	NAWCWD China Lake		0.928	10/02						0.928	
Aircraft Compatibility/Design Study	WX	NAWCAD Patuxent River		1.017	10/02						1.017	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	1.945		0.000		0.000		0.000	1.945	
Remarks:												

R-1 SHOPPING LIST - Item No. 109

**UNCLASSIFIED**



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604329N Small Diameter Bomb (SDB)			A3072 Small Diameter Bomb (SDB)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	1.945		0.000		0.000		0.000	1.945	
Remarks:												

R-1 SHOPPING LIST - Item No. 109

**UNCLASSIFIED**

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CLASSIFICATION: Unclassified

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604366N/STANDARD MISSILE IMPROVEMENTS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	13.574	20.819	76.927	100.683	189.229	191.916	213.595	207.216
K0439/Standard Missile Improvements	1.224	15.929	42.717	50.683	23.036	0.986	0.940	0.932
K2639/Standard Missile Improvements	12.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K3092/Standard Missile 5 Program	0.000	4.890	34.210	50.000	166.193	190.930	212.655	206.284

**Defense Emergency Response Funds (DERF) Funds:** No DERF funds are associated with this program/project.

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

"...The following capabilities are required:

"...(6) Effective weapon systems that will deliver timely lethal firepower to the threat systems and supporting structures in hostile territory, provide in-flight destruction capabilities over the total flight path, and provide continuous protection to forward deployed maneuver forces as well as theater rear assets."

-Mission Need Statement for Joint Theater Air and Missile Defense, May 1999

"Six critical operational goals...

"Projecting and sustaining U.S. forces in distant anti-access or area-denial environments and defeating anti-access and area-denial threats;

"Defenses against known and emerging threats must be developed.

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

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CLASSIFICATION: Unclassified

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604366N/STANDARD MISSILE IMPROVEMENTS	
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> “The United States must retain the capability to send well-armed and logistically supported forces to critical points around the globe, even in the face of enemy opposition “The QDR emphasizes the need for new investments that would enable U.S. forces to defeat anti-access and area-denial threats and to operate effectively in critical areas.” - Quadrennial Defense Review Report, September 30, 2001</p> <p>Standard Missile-2 (SM-2) Block IIIB is the Navy's premier Anti-Air Warfare (AAW) missile, providing both area air defense for the fleet and self defense for individual Aegis CGs and DDGs, as required by the Joint TAMD MNS, DPG, QDR, and Ship Class AAW Self Defense Capstone Requirements Document. Minor agility, fuzing, and computer modifications to SM-2 Block IIIB are under development to restore performance in the near term against a specific existing proliferated ASCM threat. Continuous analysis of missile capabilities vs. ever-evolving and proliferating aircraft and anti-ship cruise missiles and long-range planning are required to keep pace with the threat. A separate, classified, advanced technology effort will begin to transition in FY03, and in FY04 a new program will start to develop a family of advanced surface missile systems. These new missile systems will leverage the Navy investment in the Aegis Weapon System, CEC, and airborne early warning systems, which will be upgraded in concert with missile development to support a fully integrated extended range detect-to-engage capability. Funding for those upgrades are also included in this line. Together, this family of systems will provide the air superiority and the umbrella of protection against the full spectrum of projected future cruise missile (anti-ship and land attack) and manned aircraft threats discussed in the Joint TAMD MNS, DPG, QDR, and TAMD Capstone Requirements Document.</p>		

R-1 SHOPPING LIST - Item No. 110

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Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 2 of 28)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME K0439 Standard Missile Improvements			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	1.224	15.929	42.717	50.683	23.036	0.986	0.940	0.932
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Minor modifications to SM-2 Block IIIB will restore performance in the near term against a specific existing proliferated ASCM threat. These include modifications to the MK45 Target Detection Device (TDD) to improve the lethal radius at low altitudes, guidance software to improve missile agility, and a new digital signal processor. Funding for the MK 45 Mod 14 TDD advanced technology development has been provided under Conventional Munitions, P.E. 0603609N, Project K1821, and the complementary engineering and transition to production efforts is funded in this line. Continuous analysis of missile capabilities vs. evolving and proliferating aircraft and anti-ship cruise missiles and long-range planning are required to keep pace with the threat. A separate, classified, advanced technology effort will begin to transition in FY03, and in FY06 a new program will start to develop a family of advanced surface missile systems. The Aegis Weapon System, CEC, and airborne early warning systems also will be upgraded in concert with missile development to support a fully integrated extended range detect-to-engage capability.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K0439 Standard Missile Improvements

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.224	0.951	4.811	1.868
RDT&E Articles Quantity				

SM-2 Block IIIB MK 45 Mod 14 TDD. FY02: Engineering and transition to production  
 FY 03: Round level integration engineering and transition to production  
 FY 04: Transition to production and flight testing  
 FY 05: Completion of flight testing and analysis

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.145	0.396
RDT&E Articles Quantity				

Failure analyses, technology assessments, analyses of missile capability vs. threat, and long-range planning to keep pace with the evolving and proliferating threat.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	14.978	31.965	39.973
RDT&E Articles Quantity				

Advanced Surface Missile Demonstration. FY03: Transition advanced technology to Advanced Surface Missile System  
 FY04 and FY05: Continue transition of advanced technology, program definition, risk reduction, and preparation for feasibility demo

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

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**CLASSIFICATION: Unclassified**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K0439 Standard Missile Improvements

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			5.796	8.446
RDT&E Articles Quantity				

Replacement of obsolete digital signal processor for SM-2 Block IIIB. FY 04: Requirements definition and preliminary design.  
FY 05: Round level integration, Critical Design Review.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

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CLASSIFICATION: Unclassified

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K0439 Standard Missile Improvements
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	1.297	16.288	33.241	41.143
Current BES/President's Budget: (FY 04/05 Pres Controls)	1.224	15.929	42.717	50.683
Total Adjustments	-0.073	-0.359	9.476	9.540

Summary of Adjustments

Congressional undistributed reductions	-0.006			
FY 02 Actuals	-0.007			
Reprogrammings	-0.025			
SBIR/STTR Transfer	-0.035			
Business Process Reform		-0.065		
IT Cost Growth		-0.030		
Economic Assumptions		-0.091	-0.057	-0.072
Inflation Savings		-0.173		
Reduced Indirect Costs				-0.002
Overhead and Direct Cost Reductions			-0.033	-0.123
Ftprint Reductions			-0.005	-0.015
Single Site Common Support			-0.005	-0.020
Reduction in Support Contractors			-0.036	-0.163
Examine Non Core Competencies			-0.003	-0.009
PBD 426			-0.004	
NWCF Rates - R&D Fuel			0.004	0.015
PBD 604			-0.985	-2.171
SM2 BLK IIIB Improvements			10.600	12.100
Congressional increases				
Subtotal	-0.073	-0.359	9.476	9.540

Schedule:

Not Applicable

Technical:

Not Applicable









# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604366N/STANDARD MISSILE IMPROVEMENTS				K0439 Standard Missile Improvements					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Port Hueneme	0.000	0.145	10/02	0.550	11/03	0.800	11/04		Continuing	Continuing
	WR	WSMR	0.000			2.700	11/03	1.600	11/04		Continuing	Continuing
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.145		3.250		2.400		0.000	Continuing	
Remarks:												
Contractor Engineering Support	C/CPAF	various	0.000	0.741	10/02	0.350	11/03	0.357	11/04		Continuing	Continuing
Government Engineering Support											0.000	
Program Management Support		various	0.000	0.755	10/02	0.350	11/03	0.350	11/04		Continuing	Continuing
Travel				0.028		0.050		0.150	11/04		Continuing	Continuing
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	1.524		0.750		0.857		0.000	Continuing	
Remarks:												
Total Cost			794.279	15.929		42.717		50.683		0.000	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 10 of 28)



# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-4a, Schedule Detail					DATE:			
<b>NOT APPLICABLE</b>					<b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604366N/STANDARD MISSILE IMPROVEMENTS				K0439 Standard Missile Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 12 of 28)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME K2639/Standard Missile Improvements			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>12.350</b>							
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Minor software modifications are necessary to improve SM-2 Block IIIB's agility and restore performance in the near term against a specific recently proliferated anti-ship cruise missile threat. Optical correlator is an effort to apply artificial intelligence developments to automatic signal recognition. Continuous analysis of missile capabilities vs. ever-evolving and proliferating aircraft and ASCMs and long-range planning are required to keep pace with the threat.

# UNCLASSIFIED

**CLASSIFICATION:** Unclassified

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K2639/Standard Missile Improvements

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.060			
RDT&E Articles Quantity				

SM-2 Block IIIB software modifications to improve agility.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.950			
RDT&E Articles Quantity				

Optical Correlator Design

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.340			
RDT&E Articles Quantity				

Future SM Strategy

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION: Unclassified**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K2639/Standard Missile Improvements			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		12.687			
Current BES/President's Budget: (FY04/05 Pres Bud Controls)		12.350			
Total Adjustments		-0.337	0.000	0.000	0.000
Summary of Adjustments					
SBIR		-0.276			
Economic Assumptions		-0.061			
Subtotal		-0.337	0.000	0.000	0.000
Schedule:					
Not applicable					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED





Exhibit R-3 Cost Analysis (page 1)							DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604366N/STANDARD MISSILE IMPROVEMENTS			K2639/Standard Missile Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												0.000
Ancillary Hardware Development												0.000
Component Development												0.000
Design and Analysis	PR	JHU/APL	2.417									2.417
	WR	NSWC/Dahlgren	1.800									1.800
	SS/CPAF	Raytheon	1.770									1.770
	PR	MIT/LL	0.240									0.240
	WR	NSWC/PHD	0.150									0.150
	WR	NAWC WD CL	0.200									0.200
												0.000
Ship Integration												0.000
Ship Suitability												0.000
Systems Engineering												0.000
Training Development												0.000
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			6.577	0.000		0.000		0.000		0.000		6.577
Remarks:												
Development Support												0.000
Software Development	SS/CPAF	Raytheon	5.357									5.357
Training Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
GFE												0.000
Award Fees												0.000
Subtotal Support			5.357	0.000		0.000		0.000		0.000		5.357
Remarks:												

# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604366N/STANDARD MISSILE IMPROVEMENTS			K2639/Standard Missile Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC PHD	0.346								0.346	
	WR	WSMR									0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.346	0.000		0.000		0.000		0.000	0.346	
Remarks:												
Contractor Engineering Support	CPAF	various	0.050								0.050	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel			0.020								0.020	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.070	0.000		0.000		0.000		0.000	0.070	
Remarks:												
Total Cost			12.350	0.000		0.000		0.000		0.000	12.350	
Remarks:												

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 18 of 28)



# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-4a, Schedule Detail						DATE:		
<b>Not applicable</b>						<b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604366N/STANDARD MISSILE IMPROVEMENTS				K2639/Standard Missile Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 20 of 28)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS			PROJECT NUMBER AND NAME K3092/SM-5			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>4.890</b>	<b>34.210</b>	<b>50.000</b>	<b>166.193</b>	<b>190.930</b>	<b>212.655</b>	<b>206.284</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project addresses the Navy's need for extended range shipboard air defense missiles. It leverages existing missile technology as well as classified, advanced technology, and it takes advantage of the Navy's investment in the Aegis Weapon System, CEC, and airborne early warning systems. This missile will provide an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of projected future cruise missile (anti-ship and land attack) and manned aircraft threats discussed in the Joint TAMD MNS, DPG, QDR, and TAMD Capstone Requirements Document.

# UNCLASSIFIED

**CLASSIFICATION:** Unclassified

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K3092/SM-5

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			6.400	10.100
RDT&E Articles Quantity				

Aegis Weapon System and MK 41 Vertical Launch System integration.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	4.890	27.810	39.900
RDT&E Articles Quantity				

Missile development. FY 03: Planning, requirements definition, trade studies.  
 FY 04: Continue program definition, risk reduction, preliminary design.  
 FY 05: Preliminary Design Review.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION: Unclassified

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604366N/STANDARD MISSILE IMPROVEMENTS	PROJECT NUMBER AND NAME K3092/SM-5			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	4.890	34.210	50.000
Current BES/President's Budget: (FY04/05 Pres Controls)		0.000	4.890	34.210	50.000
Total Adjustments		0.000	4.890	34.210	50.000
Summary of Adjustments					
Minor Programmatic Adjustments			-0.110	-0.790	
Reprogrammings				35.000	50.000
Congressional increases			5.000		
Subtotal		0.000	4.890	34.210	50.000
Schedule:					
TBD.					
Technical:					
TBD.					

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED





Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604366N/STANDARD MISSILE IMPROVEMENTS			K3092/SM-5						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Design and Analysis	PR	JHU/APL, Laurel MD	0.000	0.200	10/02	1.750	11/03	2.000	11/04	Continuing	Continuing	
	PR	MIT Lincoln Lab, Lexington, MA	0.000			0.100	11/03	0.100	11/04	Continuing	Continuing	
	WR	NAWC WD China Lake, CA	0.000	0.200	10/02	0.700	11/03	0.700	11/04	Continuing	Continuing	
	WR	NSWC Dahlgren, VA	0.000	0.050	10/02	0.100	11/03	0.100	11/04	Continuing	Continuing	
	WR	NSWC Indian Head, MD	0.000			0.070	11/03	0.052	11/04	Continuing	Continuing	
	TBD	Contractor TBD	0.000	3.750	03/03	19.700	11/03	29.300	11/04	Continuing	Continuing	
	WR	NSWC Port Hueneme, CA	0.000			0.150	11/03	0.150	11/04	Continuing	Continuing	
	WR	NWS Earle, NJ	0.000			0.050	11/03	0.052	11/04	Continuing	Continuing	
	WR	NSWC Crane, IN	0.000			0.050	11/03	0.051	11/04	Continuing	Continuing	
											0.000	
Ship Integration	WR	PMS400	0.000			4.900	11/03	7.100	11/04	Continuing	Continuing	
	WR	NSWC Dahlgren	0.000			1.500	11/03	3.000	11/04	Continuing	Continuing	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	4.200		29.070		42.605		Continuing	Continuing	
Remarks:												
Development Support	WR	various	0.000	0.590	10/02	4.180	11/03	6.050	11/04	Continuing	Continuing	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.590		4.180		6.050		Continuing	Continuing	

# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604366N/STANDARD MISSILE IMPROVEMENTS			K3092/SM-5						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Port Hueneme, CA	0.000			0.200	11/03	0.225	11/04	Continuing	Continuing	
	WR	White Sands Missile Range,	0.000			0.150	11/03	0.500	11/04	Continuing	Continuing	
											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.350		0.725		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	CPAF	various	0.000	0.100	03/03	0.600	11/03	0.600	11/04	Continuing	Continuing	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel						0.010		0.020		Continuing	Continuing	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.100		0.610		0.620		Continuing	Continuing	
Remarks:												
Total Cost			0.000	4.890		34.210		50.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 26 of 28)



# UNCLASSIFIED

CLASSIFICATION: Unclassified

Exhibit R-4a, Schedule Detail						DATE:		
<b>TBD</b>						<b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604366N/STANDARD MISSILE IMPROVEMENTS				K3092/SM-5			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 28 of 28)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE <b>0604373N Airborne Mine Countermeasures</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	249.403	58.363	73.728	88.514	49.954	13.400					533.362
Airbone Mine Hunt System / Q0529/Q2884*	164.823	10.741	16.805	17.175	4.968						214.512
ALMDS / Q2047	39.950	13.333	18.049	10.790	3.739						85.861
OASIS / Q2427/Q2883*	13.983	13.403	14.022	14.790	11.307	0.847					68.352
AMNS / Q2473/Q9069*	30.647	20.886	21.787	45.759	29.940	12.553					161.572
SNIUTT / Q9179			3.065								3.065
											0.000
Quantity of RDT&E Articles	3		2		5						10
<p>* Funding includes the following:  FY02 Congressional Adds: AQS-20 Airborne Minehunting Sonar-\$2.423M; RTASS Project -\$2.700M; MH-60S Untethered Airborne Mine Neutralization-\$4.155M  FY03 Congressional Adds: RTASS Project -\$0.977M; Surface Navy Integrated Undersea Tactical Technology - \$3.065M</p> <p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> The Airborne Mine Countermeasures (AMCM) programs will deploy to the fleet as sensors integrated into the MH-53E and MH-60S platforms in order to provide Mine-Like Object Detection/classification/localization, Mine Identification, mine reacquisition and neutralization, and influence clearance capabilities. The "Next Generation" AMCM systems will provide this set of capabilities to the Carrier Battle Group/Amphibious Ready Group (CVBG/ARG) beginning in Calendar Year 2005. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA). Some interest in the following areas has been expressed: search and rescue; Surface fire support; ASW operations; Protection/offense against small craft/vehicles; Air to air operations; Very shallow water MCM; Swimmer defense and Torpedo defense.</p>											

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 39)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0604373N/Airborne Mine Countermeasures</b>				PROJECT NUMBER AND NAME <b>Q0529/Q2884 Airborne Mine Hunt Systems</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	164.823	10.741	16.805	17.175	4.968	0.000	0.000	0.000	0.000	0.000	214.512
RDT&E Articles Qty											0

**(U) 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 minefield reconnaissance (mine density and location) at high area search rates. The AN/AQS-20A is being developed to address the emergent requirements for mine identification and to integrate AMCM systems with a MH-60S platform. The AN/AQS-20A will also be the minehunting sonar component for the Remote Minehunting System (RMS). The AN/AQS-20A will be developed to meet the requirements of the Organic MCM platforms. Note: The AN/AQS-20/X nomenclature designation to AN/AQS-20A was approved May 02.

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>		R-1 ITEM NOMENCLATURE <b>0604373N Airborne Mine Countermeasures</b>		
<b>(U) B. PROGRAM CHANGE SUMMARY:</b>				
(U) B. PROGRAM CHANGE SUMMARY:	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget	61.097	67.240	67.027	24.861
Current BES/President's Budget	58.363	73.728	88.514	49.954
Total Adjustments	-2.734	6.488	21.487	25.093
Summary of Adjustment				
SBIR/STTR Transfer	-1.164			
Misc Adjustments	1.570	6.488	21.487	25.093
	-1.164	6.488	21.487	25.093
<p><b>Schedule:</b> Acquisition Strategy for the Organic Airborne Mine Countermeasure (OAMCM) programs has changed in order to reflect restructuring to integrate the MH-60S assets availability to support testing. <b>AN/AQS-20A</b> In response to a delay in a test ready MH-60S (deployment platform) and expansion of test/integration requirements, from PB03, the program schedule has been modified to incorporate platform of opportunity (MH-53) CT &amp; DT testing during FY03 to mitigate impacts of MH-60S availability. MH-53 to MH-60S Delta DT and MH-60S OT testing will be conducted during FY04 and completed in FY05 in support of achieving a scheduled FY05 FRPD and IOC. <b>ALMDS</b> Due to a 9-month delay of a test ready MH-60S (deployment platform), Developmental Testing and Operational Testing on this platform has been rescheduled. The ALMDS program will be conducting Contractor Testing and initial Developmental Testing on an alternate platform (SH-60F). This alternate platform testing will allow for an LRIP decision to support IOC. A revised Acquisition Program Baseline is currently in route with updated schedule parameters. <b>OASIS</b> The program is currently in the SD&amp;D phase where three engineering development models (EDMs) will be developed for test and evaluation. Following the Milestone C program decision for Full Rate Production in FY 2006, a total of 44 OASIS systems will be produced to meet the inventory requirement over a five-year period. <b>AMNS</b> Due to a late approval of the Acquisition Strategy resulted in the delay of schedule for the AMNS (MH-60S) SD&amp;D contract award until FY03. Due to unexpected growth of the AMNS (MH-53E) program caused by technical and explosive safety issues, it was necessary to utilize FY01 and FY02 RDT&amp;E funds originally designated for the AMNS (MH-60S) program on the MH-53E variant. As such, the RDT&amp;E and Procurement profiles for the AMNS (MH-60S) were realigned. The impact on the procurement profile has been significant. The funding realignment has caused delay of the AMNS (MH-60S) LRIP until FY06 (IOC in FY07) with full rate production to occur between FY07 and FY11. <b>RAMICS</b> Schedule revision will award a SD&amp;D contract in Aug 02, SD&amp;D contractor's inputs, and current funding profile.</p>				

R-1 SHOPPING LIST - Item No. 111



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N , BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>	PROJECT NUMBER AND NAME <b>Q0529/Q2884 Airborne Mine Hunt Systems</b>
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.650	6.097	4.469	0.581
RDT&E Articles Quantity				

Complete EDM fabrication, including incorporation of Electro-Optic Identification (EOID) sensor capabilities. Conduct EDM testing with maintainability requirements also refurb EDMs.. Acquire EOID test units.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.631	10.148	11.946	3.827
RDT&E Articles Quantity				

Continued integration of towed body with MH-60S console and parallel towed body/MH-60S Console hardware-software integration and testing. Conduct MH-60S DT and begin OT. Continue interface/integration with MH-60S, C4I Interface and MEDAL. Continue development of ILS & supportability products, training materials. Conduct single-site (alternative site) CAD/CAC testing and initiate CAIDC. Conduct parallel MH-60S Console test and common console/Aircraft Integration. Conduct platform of opportunity (MH-53) testing, i.e, CT, DT, AUTEK Tests in addition to WSIT CT and AFCS.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.460	0.560	0.760	0.560
RDT&E Articles Quantity				

Support completion of MH-60S OT events. Develop documentation in support of FRPDR. Continue development of ILS & supportability products and engineering support. Finalize documentation in support of MS-C requirements.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N , BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604373N Airborne Mine Countermeasures				<b>PROJECT NUMBER AND NAME</b> Q0529/Q2884 Airborne Mine Hunt Systems			
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
424800 OPN										
AQS-20	22.114	13.061								
AQS-20A				32.095	25.548	48.465	69.268	58.732	CONT.	CONT.
 <b>(U) E. ACQUISITION STRATEGY: *</b>										
Procure two (2) AN/AQS-20 towed bodies in FY02 to be modified to AN/AQS-20A units. Upon successful completion of DT and MS C, Sole Source MH-60S systems procurement will begin in FY05 with a Full Rate Procurement contract following a Full Rate Production Decision Review (FRPDR).										
 <b>(U) F. MAJOR PERFORMERS: **</b>										
Raytheon Corp, Portsmouth, RI - Prime development contractor. Software and hardware developer for AN/AQS-20A towed body and integration with MH-60S platform. Arete Corp, Tucson, Arizona - Major Subcontractor to Raytheon Corp. Responsible for design and development of Electro-Optic Identification (EOID) capability within AN/AQS-20A towed body. CSS Panama City, Fl. - Technical Design Agent. Provide AN/AQS-20A system design, development, integration and contractor oversight; ensure operational requirements are satisfied during all SD&D test events.										

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE: <b>February 2003</b>					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q0529/Q2884 Airborne Mine Hunt Systems</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	SS/CPIF	Raytheon, Portsmouth, RI	18.257	6.470	10/02	4.469	10/03	0.581	10/04		29.777	
Hardware/Software Development	C/CPFF	Raytheon, Portsmouth, RI	60.150								60.150	
Hardware/Software Development	WR	CSS Panama City, FL	4.966								4.966	
Hardware/Software Development	C/FP	Northrop, Grumman	4.572								4.572	
Hardware/Software Development	SS/CPIF	Raytheon, RI (Cong Add)	0.965								0.965	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			88.910	6.470		4.469		0.581		0.000	100.430	
Remarks:												
Engineering Services	WR	CSS Panama City, FL	22.003	2.200	10/02	4.100	10/03	1.737	10/04		30.040	
Engineering Services	C/CPFF	Raytheon, Portsmouth, RI	1.500	0.500	10/02						2.000	
Engineering Services	VAR	Various	49.889	1.908	10/02	1.757	10/03	0.250	10/04		53.804	
Engineering Services	SS/CPIF	Raytheon, Portsmouth, RI	1.941			1.323	10/03	0.300	10/04		3.564	
											0.000	
ILS Functions	WR	CSS Panama City, FL	4.269	0.600	10/02	0.900	10/03		10/04		5.769	
ILS Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.326	0.500	10/02						0.826	
ILS Functions	VAR	Various	0.736					0.700	10/04		1.436	
Subtotal Support			80.664	5.708		8.080		2.987		0.000	97.439	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>				<b>Q0529/Q2884 Airborne Mine Hunt Systems</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E Functions	WR	CSS Panama City	3.409	3.367	10/02	3.104	10/03	0.400	10/04		10.280	
T&E Functions	SS/CPIF	Raytheon, Portsmouth, RI	0.422			0.562	10/03	0.300	10/04		1.284	
T&E Functions	VAR	Various	0.543	0.700	10/02	0.200	10/03	0.140	10/04		1.583	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			4.374	4.067		3.866		0.840		0.000	13.147	
Remarks:												
Management Support			1.287	0.500	10/02	0.700	10/03	0.500	10/04		2.987	
Travel			0.329	0.060	10/02	0.060	10/03	0.060	10/04		0.509	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.616	0.560		0.760		0.560		0.000	3.496	
Remarks:												
Total Cost			175.564	16.805		17.175		4.968		0.000	214.512	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>										PROJECT NUMBER AND NAME <b>Q0529/Q2884 Airborne Mine Hunt Systems</b>														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Acquisition Milestones</b>												MSC △					FRP Dec △	IOC ☆																
SD&D Phase																																		
EDMs Delivery				△△																														
Software Delivery V 5.X SW Delivery			Final Delivery △																															
<b>Test &amp; Evaluation Milestones</b>																																		
Development Test			SDCT ▽▽		CT ▽▽		MH-53E Sys DT ▽▽		MH-60S Int DT ▽▽																									
Operational Test																					MH-60S OT ▽▽													
<b>Production Milestones</b>																																		
LRIP I FY 05																	AN/AQS-20A LRIP & Production MH 60S																	
FRP FY 06																									AN/AQS-20A Deliveries									
Deliveries																									2	2	2	1	1	2	2	2	2	

R-1 SHOPPING LIST - Item No. 111

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>				PROJECT NUMBER AND NAME <b>Q2047 Airborne Laser Mine Detection System</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	39.950	13.333	18.049	10.790	3.739	0.000	0.000	0.000	0.000	0.000	85.861
RDT&E Articles Qty	3										3

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

The Airborne Laser Mine Detection System (ALMDS), designation AN/AES-1, is a non-acoustic Airborne Mine Countermeasures (AMCM) high area coverage system that detects, classifies, and localizes floating, drifting, and near-surface moored sea mines. The system is deployed from the MH-60S helicopter and will provide organic airborne mine defense for the Carrier Battle Groups and Amphibious Ready Groups. The system represents a capability that does not exist in the current Mine Countermeasures (MCM) inventory.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>	PROJECT NUMBER AND NAME <b>Q2047 Airborne Laser Mine Detection System</b>
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.495	9.427	2.259	
RDT&E Articles Quantity				

EDM development, fabrication, software coding.  
Continue to conduct technical studies, MH-60 S Interface, C4I Interface, and MEDAL.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.838	2.505	2.191	1.183
RDT&E Articles Quantity				

Integrated Logistics Support and delivery of Technical Data Package  
Continue to monitor contractor performance and technical review of CDRLs.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		6.117	6.340	2.556
RDT&E Articles Quantity				

Contractor Testing, Developmental Testing-II B/Operational Assessment on platform of opportunity (FY03)  
Developmental Testing-II C, and begin Operational Testing (OPEVAL) (FY04)  
Completion of Operational Testing (OPEVAL) (FY05)



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604373N Airborne Mine Countermeasures			<b>PROJECT NUMBER AND NAME</b> Q2047 Airborne Laser Mine Detection System				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
424800 OPN	0.000	0.000	11.120	21.407	23.358	52.418	53.584	54.542	0.000	216.429
<b>(U) E. ACQUISITION STRATEGY: *</b>										
<p>In April 2000, the ALMDS program received MS II approval to enter the Engineering and Manufacturing Development (E&amp;MD) phase. Northrop Grumman won the competitively awarded E&amp;MD contract.</p> <p>The ALMDS E&amp;MD contract with Northrop Grumman has 3 types of incentives: schedule incentive for early delivery of EDM units; technical incentive for performance reliability and maintainability; and a cost incentive - a cost sharing percentage both for an overrun and an underrun. Successful completion of DT-IIB, on an alternate platform (SH-60F), will support a Low-Rate Initial Production (LRIP) decision (2 units), which will be an option to the current E&amp;MD contract. These LRIP units will be used to meet initial capability requirements. After a successful OPEVAL on the intended deployment platform (MH-60S), Full-Rate Production will begin. The first full-rate production lot will be an option to the current E&amp;MD contract to prove out the producibility of the system. The remaining 38 production units will be awarded after a full and open competition.</p>										
<b>(U) F. MAJOR PERFORMERS: **</b>										
<p>Northrop Grumman, Melbourne, FL - Prime Contractor for Engineering, Manufacture Development, awarded 4/00.          Costal Systems Station, Panama City, FL - Technical Direction Agent</p>										

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2047 Airborne Laser Mine Detection System</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WR	CSS, Panama City	0.465	0.250	10/02	0.217	10/03				0.932	
Hardware/Software Development	RCP	CSS, (Prime Contractor)	19.086	1.454	10/02	0.433	10/03				20.973	
Hardware/Software Development	RCP	Metron	0.625								0.625	
Hardware/Software Development	RCP	CSS, Panama City		0.200	10/02	0.200	10/03				0.400	
Hardware/Software Development		SAIC		0.400	10/02						0.400	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			20.176	2.304		0.850		0.000		0.000	23.330	
Remarks:												
Engineering Services	WR	CSS, Panama City	7.441	1.173	10/02	0.677	10/03	0.300	10/04		9.591	
Engineering Services	RCP	CSS, (Prime Contractor)	9.632	0.780	10/02	0.100	10/03				10.512	
Engineering Services	VAR	Various	4.080	2.638	10/02	1.418	10/03	0.449	10/04		8.585	
Engineering Services	RCP	Metron/NRL Stennis	2.871								2.871	
ILS Functions	WR	CSS, Panama City	1.097	0.498	10/02	0.375	10/03	0.219	10/04		2.189	
ILS Functions	RCP	CSS, (Prime Contractor)	4.405	1.750	10/02	0.341	10/03	0.670	10/04		7.166	
ILS Functions	VAR	Various/NRL Stennin	1.062	0.025	10/02	0.025	10/03	0.025	10/04		1.137	
ILS Functions	RCP	CSS, Panama City		0.232	10/02			0.400	10/04		0.632	
Subtotal Support			30.588	7.096		2.936		2.063		0.000	42.683	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>				<b>Q2047 Airborne Laser Mine Detection System</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Testing and Evaluation	RCP	CSS, (Prime Contractor)	1.008	3.100	10/02	1.307	10/03	0.063	10/04		5.478	
Testing and Evaluation	WR	CSS, Panama City	0.199	3.017	10/02	3.847	10/03	0.113	10/04		7.176	
Testing and Evaluation	VAR	Various	0.392	0.050	10/02						0.442	
Testing and Evaluation	RCP	CSS, Panama City				0.400	10/03				0.400	
											0.000	
											0.000	
											0.000	
Subtotal T&E			1.599	6.167		5.554		0.176		0.000	13.496	
Remarks:												
Management Support		Travel	0.220	0.050	10/02	0.050	10/03	0.050	10/04		0.370	
Management Support	VAR	Various	0.700	0.700	10/02	0.700	10/03	0.310	10/04		2.410	
Management Support	RCP	CSS, (Prime Contractor)		1.282	10/02	0.500	10/03	0.890	10/04		2.672	
Management Support	WR	CSS, Panama City		0.450	10/02	0.200	10/03	0.250	10/04		0.900	
											0.000	
											0.000	
Subtotal Management			0.920	2.482		1.450		1.500		0.000	6.352	
Remarks:												
Total Cost			53.283	18.049		10.790		3.739		0.000	85.861	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>								PROJECT NUMBER AND NAME <b>Q2047 Airborne Laser Mine Detection System</b>																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<b>Acquisition Milestones</b>									MS C △								FRPDR △				IOC ☆												
Fabrication					EDM Units								LRIP Units																				
System Development									PCA △				PRR △																				
Production Awards									Release Production RFP △							FRP Award △																	
<b>Test &amp; Evaluation Milestones</b>																																	
Contractor Test					CT-IIA (SH-60F)																												
Development Test					DT-IIA (MH-60S)																												
Operational Test																																	
<b>Production Milestones</b>																																	
LRIP FY 04													LRIP Start △																				
FRP FY 05																FRP 1 Start △				FRP 2 Start △				FRP 3 Start △				FRP 4 Start △				FRP 5 Start △	
Deliveries																LRIP (2)				FRP 1 (4)	FRP 2 (4)					FRP 3 (11)				FRP 4 (11)			

R-1 SHOPPING LIST - Item No. 111

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>				PROJECT NUMBER AND NAME <b>Q2427/Q2883 Organic Airborne and Surface Influence Sweep</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	13.983	13.403	14.022	14.790	11.307	0.847	0.000	0.000	0.000	0.000	68.352
RDT&E Articles Qty					3						3

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

The OASIS system is a towed Minesweeping System that is deployed from specially configured MH-60S helicopters or surface craft in support of the Carrier Battle Group (CVBG) and the Amphibious Ready Group (ARG). The system provides a rapid response sweeping capability against bottom and moored, acoustic and magnetic, or combination acoustic/magnetic influence mines in support of mine clearance operations where mine hunting is ineffective. The system consists of a towed body, a magnetic/acoustic influence capability, a control/monitoring system under software control and interfaces to the helicopter Carriage, Stream, Tow, and Recovery System and the Common Console. The program is currently in the SD&D phase where three engineering development models (EDMs) will be developed for test and evaluation. Following the Milestone C program decision for Full Rate Production in FY 2006, a total of 44 OASIS systems will be produced to meet the inventory requirement over a five-year period.

R-1 SHOPPING LIST - Item No. 111

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>	PROJECT NUMBER AND NAME <b>Q2427/Q2883 Organic Airborne and Surface Influence Sweep</b>
---	--	--

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.975	4.822	4.992	0.899
RDT&E Articles Quantity				

Obtained Milestone B approval. Awarded SD&D Contract for engineering design and Engineering Development Model (EDM) fabrication and begin to integrate EDMs into platform.. Awarded SD&D contract to complete Design, Conduct CDR, Fabricate 3 EDM, and begin to integrate EDMs into platform.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.813	7.724	9.228	9.843
RDT&E Articles Quantity				

Conduct technical studies on MHC60S interface and other technical studies.(Cong. add) Conducted remote technical assistance to MCM ship.  
 Conduct TECHEVAL and OPEVAL  
 Conducted shock test and other technical studies.  
 Conduct studies on C4I Interface and MEDAL.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.615	1.476	0.570	0.565
RDT&E Articles Quantity				

Monitored Contractor performance and technical review of CDRLs. Conduct HCDR and PDR.  
 Continue to monitor Contractor performance and technical review of CDRLs.  
 Support platform integration.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																									
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604373N Airborne Mine Countermeasures			<b>PROJECT NUMBER AND NAME</b> Q2427/Q2883 Organic Airborne and Surface Influence Sweep																										
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>424800 OPN</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">11.120</td> <td style="text-align: center;">28.388</td> <td style="text-align: center;">29.012</td> <td style="text-align: center;">29.532</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p style="margin-top: 20px;"><b>(U) E. ACQUISITION STRATEGY:</b></p> <p style="margin-left: 40px;">After Milestone B review in FY02, a SD&amp;D contract was awarded. In FY06, following a successful DT and MS C, procurement options will be exercised.</p> <p style="margin-top: 20px;"><b>(U) F. MAJOR PERFORMERS:</b></p> <p style="margin-left: 40px;">EDO Corporation, Amityville, NY. - Production of EDM units, participate in engineering, system integration, and meeting ILS requirements. Coastal Systems Station, Panama City, FL. - Contributing to ILS, program management, engineering, and system integration.</p>											<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	424800 OPN	0.000	0.000	0.000	0.000	11.120	28.388	29.012	29.532	CONT.	CONT.
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																						
424800 OPN	0.000	0.000	0.000	0.000	11.120	28.388	29.012	29.532	CONT.	CONT.																						

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>Airborne Mine Countermeasures/0604373N</b>			<b>Q2427/Q2883 Organic Airborne and Surface Influence Sweep</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/CPFF	EDO Corp.	1.722								1.722	
Hardware/Software Development	C/CPIF	EDO Corp.	2.200	3.845	10/02	4.992	10/03	0.899	10/04	0.000	11.936	
Hardware/Software Development	SS/CPFF	Aeptec Microsystems Inc Rockville, MD	5.681	0.977							6.658	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			9.603	4.822		4.992		0.899		0.000	20.316	
Remarks:												
Support											0.000	
Engineering Services	C/CPIF	EDO Corp	3.663	1.993	10/02	1.913	10/03	0.750	10/04	0.200	8.519	
Engineering Services	WR	CSS Panama City	7.012	2.003	10/02	1.291	10/03	0.375	10/04	0.647	11.328	
Engineering Services	WR	NSWC Carderock MD	0.725								0.725	
Engineering Services/ILS	VAR	Various	1.255	0.000	10/02	1.231	10/03	0.935	10/04		3.421	
Engineering Services	PD	ONR	0.000	0.000		0.992	10/03	0.643	10/04		1.635	
ILS Functions	C/CPIF	EDO Corp	0.732	0.664	10/02	0.667	10/03	0.675	10/04		2.738	
ILS Functions	WR	CSS Panama City	0.876	0.305	10/02	0.307	10/03	0.250	10/04		1.738	
Subtotal Support			14.263	4.965		6.401		3.628		0.847	30.104	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2427/Q2883 Organic Airborne and Surface Influence Sweep</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation Functions											0.000	
T&E Functions	C/CPIF	EDO Corp	0.732	2.659	10/02	2.827	10/03	4.252	10/04		10.470	
T&E Functions	WR	CSS Panama City, FL	1.186	0.100	10/02	0.000	10/03	1.963	10/04		3.249	
T&E Functions	VAR	Various	0.554								0.554	
											0.000	
											0.000	
											0.000	
Subtotal T&E			2.472	2.759		2.827		6.215		0.000	14.273	
Remarks:												
Management Support											0.000	
Management Support	VAR	Various	0.913	1.446	10/02	0.540	10/03	0.540	10/04		3.439	
Management Support		Travel	0.135	0.030	10/02	0.030	10/03	0.025	10/04		0.220	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.048	1.476		0.570		0.565		0.000	3.659	
Remarks:												
Total Cost			27.386	14.022		14.790		11.307		0.847	68.352	
Remarks:												

R-1 SHOPPING LIST - Item No. 111

**UNCLASSIFIED**





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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>				PROJECT NUMBER AND NAME <b>Q2473/Q9069 Airborne Mine Neutralization Systems</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	30.647	20.886	21.787	45.759	29.940	12.553	0.000	0.000	0.000	0.000	161.572
RDT&E Articles Qty			AMNS 2		RAMICS 2						4

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

The **Airborne Mine Neutralization Systems (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 is being tested on the MH-53E to prove out the neutralization effectiveness. The system will also 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).

The **Rapid Airborne Mine Clearance System (RAMICS)** program began Concept & Technology Development phase 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) Gun Subsystem (including gun and turret)
- (b) Munition Subsystem - MK258 Mod 1 Armor Piercing, Fin Stabilized, Discarding Sabot-Tracer (APFSDS-T)
- (c) Targeting Sensor Subsystem.
- (d) Fire Control Subsystem.
- (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). Some interest in the following areas has been expressed: search and rescue; Surface fire support; ASW operations; Protection/offense against small craft/vehicles; Air to air operations; Very shallow water MCM; Swimmer defense and Torpedo defense.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>	PROJECT NUMBER AND NAME <b>Q2473/Q9069 Airborne Mine Neutralization Systems</b>

**(U) B. Accomplishments/Planned Program**

AMNS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	16.486	11.723	14.539	15.711
RDT&E Articles Quantity		2		

**FY02 ACCOMPLISHMENTS:**  
Complete MH-53E TECHEVAL. Conduct MH-53E OPEVAL. Investigate/Award Untethered Airborne Mine Neutralization Systems (Congressional Add).

**FY03 PLAN:** Award SD&D contract, initiate design, develop software, and integrate aboard MH-60S for test and evaluation.

**FY04 PLAN:** Continue design, develop software, and integrate aboard MH-60S, conduct 2105 testing and environmental testing. Continue to monitor Contractor performance and technical review of CDRLs.

**FY05 PLAN:** Prepare documentation for MH-60S contract award (production), conduct contractor test, MH-60S TECHEVAL, initiate MH-60S OPEVAL. Continue to monitor Contractor performance and technical review of CDRLs. Develop program documentation to achieve MS-C.

RAMICS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.400	10.064	31.220	14.229
RDT&E Articles Quantity				2

**FY02 ACCOMPLISHMENTS:**  
Completed ORD and other Acquisition documentation and obtained a successful Milestone (MS) B on 29 July 2002. Awarded System Development & Demonstration (SD&D) contract and initiated Design Phase including Integrated Logistics Support (ILS) and Technical Design Agent (TDA) engineering efforts. Conducted 30mm Cannon risk reduction efforts including Recoil Reduction Tests.

**FY03 PLAN:** Conduct Rig and Munition Tests. Continue design and development under SD&D contract. Conduct Preliminary Design Review (PDR).

**FY04 PLAN:** Continue design, development under SD&D contract. Conduct Critical Design Review (CDR).

**FY05 PLAN:** Complete design, develop, and fabrication of Engineering Development Models (EDMs). Complete Contractor's Testing (CT) and initiate Technical Evaluation (TECHEVAL).

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>			PROJECT NUMBER AND NAME <b>Q2473/Q9069 Airborne Mine Neutralization System</b>				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
AMNS 424800 OPN	11.200	3.365	0.000	0.000	4.452	11.475	15.285	17.548	CONT.	CONT.
AMNS 422500 WPN	0.000	0.720	0.000	0.000	2.845	7.145	3.843	3.918	CONT.	CONT.
 <b>(U) E. ACQUISITION STRATEGY: *</b>										
Procurement for eight (8) MH-53E system in FY02-03 will be sole source to Lockheed Martin. Full and open competition is planned for the AMNS (MH-60S) program. In FY06, following a successful DT and MS-C, an LRIP award is planned for two (2) MH-60S systems. FRPDR is planned for FY06.										
 <b>(U) F. MAJOR PERFORMERS: **</b>										
Lockheed Martin Corporation (Ocean, Radar, & Sensor Systems) Syracuse, NY Modification and fabrication of a non-developmental item (NDI) AMNS prototype system and the design, construction, and integration of AMNS equipment into the MH-53E helicopter Actual OTA Award: 12/98 Projected Production Contract Award: 5/03										
Naval Surface Warfare Center Coastal Systems Station Dahlgren Division Panama City, FL Serves as the Technical Direction Agent (TDA) for the AMNS program.										
 <b>AMNS ONLY</b>										

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>			PROJECT NUMBER AND NAME <b>Q2473/Q9069 Airborne Mine Neutralization System</b>				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
RAMICS 422500 WPN	0.000	0.000	0.000	0.000	10.508	19.251	19.605	19.965	CONT	CONT
RAMICS 0019600 PANMC	0.000	0.000	0.000	0.000	0.222	0.674	0.686	0.698	CONT	CONT
 <b>(U) E. ACQUISITION STRATEGY:</b>										
RAMICS: Achieved MS B in July 2002 and awarded SD&D contract in August 2002 based on a full and open competition. Following a successful DT and MS C in FY06 , a FY06 LRIP award is planned for two (2) systems for fleet use. Full Rate Production (FRP) is scheduled to start in FY07.										
 <b>(U) F. MAJOR PERFORMERS:</b>										
SD&D Contractor, Northrop Grumman Melbourne, FL - Awarded RAMICS SD&D contract in August 2002 for two RAMICS Engineering Development Models (EDMs) scheduled for delivery in FY05.										
Alliant TechSystems (ATK) - Awarded RAMICS Gun Subsystem contract in July 2001 via NSWC Crane. Performed PDR, CDR, and Acceptance Testing in FY02. The contract has option for production units.										
NSWC CSS, Panama City, FL - As Technical Design Agent (TDA) for RAMICS; supported successful completion of CTD Phase, prepared draft Request For Proposal (RFP) for the SD&D contract, supported the proposal evaluation, and conducted a series of risk reduction tests in FY00 - FY02 and plans to conduct additional tests .										
NSWC Crane, Crane IN - As a Weapon System Development, Crane is responsible for definition and selection of the RAMICS Gun Subsystem. Accordingly, awarded contract to ATK.										
NAWC Pax, Pautaxant River, MD - As Aircraft(A/C) Integration Agent, coordinates all tests with A/C Integration.										
RAMICS ONLY										

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2473/Q9069 Airborne Mine Neutralization System</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/845	Lockheed Syracuse, NY	3.331								3.331	
Hardware/Software Development	VAR	Various	0.338								0.338	
Hardware/Software Development	WR	CSS Panama City, FL	0.290	0.383	12/02	0.483	10/03	0.150	10/04		1.306	
Hardware/Software Development	C/CPIF	Unknown	7.176	6.487	01/03	5.156	10/03	0.965	10/04		19.784	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			11.135	6.870		5.639		1.115		0.000	24.759	
Remarks:												
Engineering Services	WR	Various	0.787								0.787	
Engineering Services	WR	CSS Panama City, FL	7.096	0.631	12/02	1.730	10/03	2.153	10/04	0.192	11.802	
Engineering Services	C/CPIF	Unknown	1.949	2.998	01/03	4.533	10/03	2.812	10/04	0.301	12.593	
											0.000	
ILS Functions	WR	CSS Panama City, FL	2.908	0.155	12/02	0.168	10/03	0.123	10/04	0.096	3.450	
ILS Functions	SS/BOA	Lockheed Syracuse, NY	0.227								0.227	
ILS Functions	C/CPIF	Unknown		0.570	01/03	0.747	10/03	0.509	10/04	0.344	2.170	
											0.000	
Subtotal Support			12.967	4.354		7.178		5.597		0.933	31.029	
Remarks: AMNS ONLY												

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Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2473/Q9069 Airborne Mine Neutralization System</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	Various	0.300								0.300	
Developmental Test & Evaluation	WR	CSS Panama City, FL	8.648					5.382	10/04		14.030	
Developmental Test & Evaluation	SS/BOA	Lockheed Syracuse, NY	1.255								1.255	
Developmental Test & Evaluation	C/CPIF	Unknown				1.103	10/03	2.937	10/04		4.040	
Operational Test & Evaluation	WR	COTF Norfolk, VA	1.400							1.068	2.468	
Operational Test & Evaluation	SS/BOA	Lockheed Syracuse, NY	0.331								0.331	
Test Assets	SS/BOA	Lockheed Syracuse, NY	0.436								0.436	
Subtotal T&E			12.368	0.000		1.103		8.319		1.068	22.858	
Remarks:												
Program Management Support	VAR	Various	0.649	0.459	10/02	0.579	10/03	0.640	10/04	0.088	2.415	
Travel			0.094	0.040	10/02	0.040	10/03	0.040	10/04	0.010	0.224	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.743	0.499		0.619		0.680		0.098	2.639	
Remarks:												
Total Cost			37.213	11.723		14.539		15.711		2.099	81.285	
Remarks: AMNS ONLY												

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EXHIBIT R4, Schedule Profile																				DATE: <b>February 2003</b>																
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																					
<b>RDT&amp;E, N / BA-5</b>					<b>0604373N Airborne Mine Countermeasures</b>										<b>Q2473/Q9069 Airborne Mine Neutralization System</b>																					
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
Prototype Phase	E&MD Phase (MH-53E)				SD&D Phase (MH-60S)																															
EDM Contract Award																																				
Significant Events																																				
EDM Deliveries																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
PROD (MH-53E) FY 03																																				
LRIP (MH-60S) FY 06																																				
FRP (MH-60S) FY 07																																				
Deliveries																																				

AMNS ONLY

R-1 SHOPPING LIST - Item No. 111

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

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**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 30 of 39)



**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2473/Q9069 Airborne Mine Neutralization System</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/CPIF	Northrop Grumman, FL	0.494	4.207	10/02	12.061	10/03	5.626	10/04	4.364	26.752	
Hardware/Software Development	Various	CSS - Panama City, FL	1.383								1.383	
Hardware/Software Development	RCP	Crane - Crane, IN	0.881								0.881	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			2.758	4.207		12.061		5.626		4.364	29.016	
Remarks: This is RAMICS only .												
Engineering Services	C/CPIF	Northrop Grumman, FL	0.553	2.533	10/02	8.162	10/03	3.073	10/04	2.676	16.997	
Engineering Services	Various	CSS - Panama City, FL	5.024	0.971	10/02	1.314	10/03	0.860	10/04	0.784	8.953	
Engineering Services	Various	Crane - Crane, IN	2.200								2.200	
Engineering Services	WR	Various	0.725			2.281	10/03	1.000	10/04	0.720	4.726	
											0.000	
											0.000	
											0.000	
Subtotal Support			8.502	3.504		11.757		4.933		4.180	32.876	
Remarks: This is RAMICS only .												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q2473/Q9069 Airborne Mine Neutralization System</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	C/CPIF	Northrop Grumman, FL		0.082	10/02	2.248	10/03	0.489	10/04	0.087	2.906	
Test & Evaluation	WR	CSS - Panama City, FL	0.930	0.200	10/02	0.100	10/03	0.661	10/04	0.600	2.491	
Test & Evaluation	WR	Crane - Crane, IN		0.500	10/02						0.500	
Test & Evaluation	Various	Various	0.893	1.000	10/02	4.720	10/03	2.199	10/04	0.893	9.705	
											0.000	
											0.000	
											0.000	
Subtotal T&E			1.823	1.782		7.068		3.349		1.580	15.602	
Remarks: This is RAMICS only .												
Management Support	Various	Various	1.149	0.541	10/02	0.300	10/03	0.300	10/04	0.300	2.590	
Management Support		Travel	0.088	0.030	10/02	0.034	10/03	0.021	10/04	0.030	0.203	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.237	0.571		0.334		0.321		0.330	2.793	
Remarks: This is RAMICS only .												
Total Cost			14.320	10.064		31.220		14.229		10.454	80.287	
Remarks: This is RAMICS only .												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>								PROJECT NUMBER AND NAME <b>Q2473/Q9069 Airborne Mine Neutralization System</b>												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>			MS B ▲														MS C △				FRPD △	IOC △										
<b>Program Phases</b>	Risk Reduction (CTD)				System Development and Demonstration (SD&D)																											
<b>Significant Events</b>		ORD ▲		CA ▲			PDR △	CDR △																								
<b>EDM Delivery</b>															EDM (2) △																	
<b>Test &amp; Evaluation Milestones</b>															CT □				TECHEVAL □													
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
LRIP FY06																																
FRP FY 07																																
<b>Deliveries</b>																																

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R-1 SHOPPING LIST - Item No. 111

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

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>				PROJECT NUMBER AND NAME <b>Q9179 Surface Navy Integrated Undersea Tactical Technology</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	3.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.065
RDT&E Articles Qty											0

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

This congressional add for Surface Navy Integrated Undersea Tactical Technology (SNIUTT) will be used to develop an AN/AQS-20A sensor training module for the Carrier Vessel - Tactical Support Center (CV-TSC) LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 36 of 39)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2002</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA -5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0604373N Airborne Mine Countermeasures</b>	PROJECT NUMBER AND NAME <b>Q9179 Surface Navy Integrated Undersea Tactical Technology</b>

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.065	0.000	0.000
RDT&E Articles Quantity				

Congressional Add. - Investigate development of an AN/AQS-20A sensor training module for the Carrier Vessel - Tactical Support Center (CV-TSC) LAN-based Surface Network Embedded Analysis and Tactical Trainer (SNEATT).

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q9179 Surface Navy Integrated Undersea Tactical Technology</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	RCP	CSS Panama City, FL		3.065	01/03						3.065	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	3.065		0.000		0.000		0.000	3.065	
Remarks:												
Development Support											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	
Award Fees											0.000	
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: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>0604373N Airborne Mine Countermeasures</b>			<b>Q9179 Surface Navy Integrated Undersea Tactical Technology</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	3.065		0.000		0.000		0.000	3.065	
Remarks:												

R-1 SHOPPING LIST - Item No. 111

# UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604503N/Submarine Systems Equipment Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	66.764	123.765	80.815	66.797	72.761	76.204	75.460	76.179
F0775/Submarine Support Equipment	0.644	1.488	1.448	1.552	1.573	1.876	1.512	1.540
F0219/Submarine Sonar Improvements	38.861	71.961	65.071	30.384	27.552	43.615	51.165	51.827
F9070/MPP/SPB/A-RCI Model for Tactical Control Info	20.698	18.704						
X0742/Submarine Integrated Antenna Systems	2.695	17.355	9.096	27.096	39.011	28.151	20.191	20.177
X1411/Submarine Tactical Communications Systems	3.866	14.257	5.200	7.765	4.625	2.562	2.592	2.635
<b>Defense Emergency Responses Funds (DERF) Funds: NOT APPLICABLE</b>								
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> 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>The Submarine Sonar Improvement Program and MPP/SPB/A-RCI Model for Tactical Control Information Management Program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21, TRIDENT and SSGN 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>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> <p>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>								

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604503N/ Submarine Systems Equipment Development

**B. (U) Program Change Summary:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 President's Budget	64.682	98.516		
FY2004 President's Budget	66.764	123.765	80.815	66.797
Total Adjustments	2.082	25.249	80.815	66.797

Summary of Adjustments

FY02 Actuals	4.614			
Affordable Towed Array		1.000		
SBIR/STTR Transfer	-1.329			
Economic Assumptions	-0.508	-0.738		
Miscellaneous Adjustments	-0.584	-2.065		
SSN/SSBN Modernization (NPES)		6.300		
Submarine Common Electronic Equipment		1.700		
MPP/APB/A-RCI /Model		19.125		
FFRDC	-0.111	-0.073		
Subtotal	2.082	25.249	0.000	0.000

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine System Equipment Development			PROJECT NUMBER AND NAME F0775/Submarine Support Equipment			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.644</b>	<b>1.488</b>	<b>1.448</b>	<b>1.552</b>	<b>1.,573</b>	<b>1.876</b>	<b>1.512</b>	<b>1.540</b>
RDT&E Articles Qty								

**A. 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(V) ES System software problem evaluation and resolution, (2) Engineering and Manufacturing Development of advanced technology transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770 and (3) Development of AN/BLQ-10(V) Technology Insertion of SIGINT threat emitters/carry-on equipment open architecture. The AN/BLQ-10(V) ES System problem evaluation will provide correction of system problems identified during Operational Evaluation (OPEVAL), Factory Training, and Follow-on Test and Evaluation (FOT&E).

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine System Equipment Development	PROJECT NUMBER AND NAME F0775/Submarine Support Equipment

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.248	0.145	0.172	0.095
RDT&E Articles Quantity				

ES Vulnerability Server (EVS): Developed under ASSEP F0770 - Correct deficiencies found during at sea testing and complete first article testing

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.396	0.365	0.428	0.095
RDT&E Articles Quantity				

Passive Surveillance Radar (PSR): Developed under ASSEP F0770 - Correct deficiencies found during at sea testing and complete first article testing

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.978	0.660	0.803
RDT&E Articles Quantity				

Communications, Acquisition and Direction Finder (CADF): AN/BLQ-10 integration through FY04 - Correct deficiencies found during test and integration with AN/BLQ-10.

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine System Equipment Development	PROJECT NUMBER AND NAME F0775/Submarine Support Equipment

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.188	0.236
RDT&E Articles Quantity				

Low Probability of Intercept (LPI) Receiver: Developed under ASSEP F0770 - Correct deficiencies found during test and integration with AN/BLQ-10.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				0.323
RDT&E Articles Quantity				

Mast Signature Reductin (MSR): Developed under ASSEP F0770 - Introduce new RAS materials for antenna adapter and new technology mast.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604503N/Submarine System Equipment Development	F0775/Submarine Support Equipment

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 President's Budget:	0.650	1.523	1.537	1.533
FY2004 President's Budget	0.644	1.488	1.448	1.552
Total Adjustments	-0.006	-0.035	-0.089	0.019
Summary of Adjustments				
Economic Assumptions	-0.003	-0.009		
Miscellaneous Adjustments	-0.003	-0.026	-0.089	0.019
Subtotal	-0.006	-0.035	-0.089	0.019

Schedule:  
Not Applicable.

Technical:  
Not Applicable

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE:		
								<b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>			0604503N/Submarine System Equipment Development			F0775/Submarine Support Equipment				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>
OPN Line 256000/256005										
ML009 APB-EW	0.000	0.657	0.668	1.452	1.770	0.828	1.890	2.277	Continuing	9.542
ML010 Tech Refresh Increments	0.000	0.000	3.456	2.093	1.114	0.864	2.368	2.761	Continuing	12.656
ML015 AN/BLQ-10(V) SSN ES Backfit System	11.300	35.224	18.499	36.243	59.671	45.039	58.512	39.672	Continuing	304.160
ML016 AN/BLQ-10(V) SSN ES Systems	0.000	0.000	0.000	0.000	6.480	5.900	6.012	24.505	Continuing	42.897
ML017 Field Change Kits	0.000	0.737	3.666	2.756	7.055	0.125	6.184	13.380	Continuing	304.160
SCN LI 201300										
PE 0204287N	21.827	22.720	22.984	23.286	23.797	48.944			Continuing	0.000
Partial (AN/BLQ-10 ES Only)										
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										
<b>E. ACQUISITION STRATEGY:</b>										
(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.										
<b>F. MAJOR PERFORMERS:</b>										
Argon Engineering, Fairfax, VA - Communications acquisition and Direction Finding system engineering and development										
Lockheed-Martin, Syracuse, NY - AN/BLQ-10 system software and hardware enhancements										
NUWC, Newport, RI - Provides AN/BLQ-10 and CADF LITE ISEA support and provides EW/SIGINT end-to-end analysis capability										

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604503N/Submarine System Equipment Development			F0775/Submarine Support Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
IEM/HPI Interface	SS/CPHF	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	1.666	0.417	01/03	0.415	12/03	0.414	12/04	CONT	CONT	CONT
Systems Engineering	WR	NUWC Newport, RI	5.419	0.195	10/02	0.200	12/03	0.199	10/04	CONT	6.304	N/A
Miscellaneous	VARIOUS	VARIOUS	12.839	0.876	N/A	0.833	12/03	0.939	N/A	0.000	15.487	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/CPHF/C	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
											0.000	
											0.000	
											0.000	
Subtotal Product Development			69.688	1.488		1.448		1.552		0.000	CONT	N/A
Remarks:												
Development Support											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/CPHF	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											0.000	
Subtotal Support			3.700	0.000		0.000		0.000		0.000	3.700	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604503N/Submarine System Equipment Development				PROJECT NUMBER AND NAME F0775/Submarine Support Equipment					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Management Support Services	C/CPAF	EG&G, Arlington, VA	0.292							0.000	0.292	0.292
Travel	TO's	Various	0.049							0.000	0.049	N/A
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.341	0.000		0.000		0.000		0.000	0.341	CONT
Remarks:												
Total Cost			73.735	1.488		1.448		1.552		CONT	CONT	CONT
Remarks:												

R-1 SHOPPING LIST - Item No. 112

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2003**

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

**RDT&E, N/BA-5**

0604503N/Submarine Sys Equip Development

F0775/Submarine Support Equipment Program

SSEP SCHEDULE		FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Threat Warning / Self Protection	Mast Signature Reduction (MSR)				Sensor Adapter (Testing)	Mast Integration	At Sea Testing		
	Low Probability of Intercept (LPI) Receiver			Interface Test	Land Based Testing	At Sea Test			
Situational Awareness Enhancements	ES Vulnerability Server (EVS)		At-Sea Tests	Production Design	First Article				
	CADF LITE / CLASSIC TROLL		TROLL Integration S/W Development	System Integration		APB-E Test	Integration		
ISR Enhancements	Passive Surveillance Radar (PSR)		At-Sea Tests	Production Design	First Article				
	Modular Sensor System (Imaging / SIGINT modules)						System Integration Design		At Sea Testing

R-1 SHOPPING LIST - Item No. 112

Exhibit R-4, RDT&E Project Justification

PAGE 10 OF 48

**UNCLASSIFIED**



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development			PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>38.861</b>	<b>71.961</b>	<b>65.071</b>	<b>30.384</b>	<b>27.552</b>	<b>43.615</b>	<b>51.165</b>	<b>51.827</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21, SSGN 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. Acoustics Rapid COTS Insertion (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, SSGN 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 N772'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 N772 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, Active Intercept and Ranging 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 system's development efforts will focus on transitioning Fiber Optic Technology into Towed Array and Handling Systems and transitioning technology into hull mounted sensor systems. This program also includes initiation of existing TB-16MF development as a more capable replacement for the existing TB-16 Arrays.

AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	25.639	21.412	20.445	23.537
RDT&E Articles Quantity				

Continue Advanced Processing Build (APB) Sea Testing, Integration and Certification. This includes upgrades to Towed, Sphere, Hull and High Frequency Arrays. This effort is primarily the transition of APB software from development to A-RCI for integration and test, and formal certification.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.500	2.500	0.500	0.500
RDT&E Articles Quantity				

Continue Precision Bottom Mapping transition, integration and testing. This effort includes the initial integration and test, and formal certification of Precision Mapping in the A-RCI system. In the outyears this effort is for integration, test and certification of Precision Bottom Mapping APB upgrades.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.900	0.900	0.800	0.800
RDT&E Articles Quantity				

Continue development, integration, test and certification of Sonar Tactical Decision Aids in the A-RCI system. In the outyears this effort is for integration, test and certification of Sonar Tactical Decision Aid APB upgrades.

24.837

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			29.100	
RDT&E Articles Quantity				

Provides funds for integration of A-RCI software updates to increase submarine combat system capabilities under a Phase 3 SBIR program. Extends APB/MPP technology insertion to enable submarines to achieve Navy network-centric warfare objectives and to accelerate development and extend common processing efforts..

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.625	10.561		
RDT&E Articles Quantity				

Continued ARCI-(V)5 development, integration, test and certification. The A-RCI-(V)5 is the A-RCI variant for the SSN 21 platform. The development effort is primarily SSN-21 unique interfaces, including the legacy AN/BSY-2 combat control system. Formal certification will complete in the 4th quarter of FY03 in preparation for the 1st quarter of FY04 installation on the SSN21.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		8.000		
RDT&E Articles Quantity				

Development, integration, test and certification of an A-RCI variant for SSGN. This effort includes the development of SSGN unique interfaces, integration and test, and formal certification of the SSGN variant of A-RCI.

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		9.200		
RDT&E Articles Quantity				

Active Intercept and Ranging (AI&R) development, integration, test and certification. This effort includes the completion of the development effort that was initiated under a Small Business Innovative Research (SBIR) contract. AI&R integration, test and certification will be completed, as well as system integration, test and certification with A-RCI system.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		5.500		
RDT&E Articles Quantity				

Total Ship Monitoring System (TSMS) development, integration, test , and certification. This effort includes the completion of the development effort that was initiated under a Small Business Innovative Research (SBIR) contract. TSMS integration, test and certification will be completed, as well as system integration, test and certification with the A-RCI system.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.100	
RDT&E Articles Quantity				

Acoustic Intelligence (ACINT) development, integration, test and certification. This effort includes the development of an onboard acoustic analysis system. ACINT integration, test and certification will be completed, as well as system integration, test and certification with the A-RCI system.

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		6.161		
RDT&E Articles Quantity				

Provides funds to support modernization of SSN/SSBN Non-Propulsion Electronics Systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.662		
RDT&E Articles Quantity				

Provides funds for Submarine Common Electronic Equipment Research.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.195	0.352		
RDT&E Articles Quantity				

Completed development, TECHEVAL and OPEVAL of TB-29(A) Towed Array.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.002	5.713	6.350	5.404
RDT&E Articles Quantity				

Continue development of Affordable Towed Array Technology Initiatives.  
Develop Fiber Optic Towed Array.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			4.776	0.143
RDT&E Articles Quantity				

Develop TB-16MF.

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY2003 President's Budget		35.638	64.601	40.778	42.833
FY2004 President's Budget		38.861	71.961	65.071	30.384
Total Adjustments		3.223	7.360	24.293	-12.449
Summary of Adjustments					
Management Reform		-0.438			
FFRDC		-0.037			
FY2002 SBIR (dtd 5-15-02)		-0.729			
Sec. 313,PL 107-206: Revised		-0.075			
FY02 BTR (July-02)		-0.020			
Economic Assumptions		-0.095	-0.413		
Issue 69270 FY02 Actuals (30-Sept)		4.617			
Business Process Reform			-0.294		
IT Cost Growth (Sec. 8109)			-0.135		
Affordable Towed Array (ATAC)			1.000		
FY03 FFRDC reductionb Sec. 8029			-0.017		
Inflation Savings			-0.781		
Miscellaneous adjustments				25.808	-11.795
SYSCOM CONTRACTOR SUPPORT				-0.006	-0.012
NWCF RATES - Naval Undersea Wa				0.024	0.027
NWCF RATES - Naval Surface War				-0.002	-0.001
SSN/SSBN Modernization			6.300		
Submarine Common Electronics			1.700		
Reduction in Support Contracto				-0.029	-0.013
Nonpay Purchase Infl				-1.151	
Nonpay Inflation				-0.351	
FY05/09 Inflation					-0.655
Subtotal		3.223	7.360	24.293	-12.449

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvement
<p><b>C. PROGRAM CHANGE SUMMARY (cont'd)</b></p> <p>Schedule:</p> <p>The A-RCI TECHEVAL/OPEVAL schedule has been modified. A-RCI is currently in OPEVAL however not all test events have been completed due to the lack of test submarines.</p> <p>The TB-29A TECHEVAL/OPEVAL schedule has been modified and will be completed during the second quarter of FY03. An LRIP III decision has been added in the third quarter of FY 02 and Milestone III has been rescheduled to the third quarter of FY 03.</p> <p>Technical:</p> <p>Not applicable</p>		

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvements
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 214700 SSN Acoustics	106.007	211.757	206.418	189.487	188.553	238.330	294.289	263.986	Continuing	Continuing
OPN BLI 214705 SSN Acoustics Installation	11.477	30.785	59.005	43.070	45.337	32.938	47.864	46.422	Continuing	Continuing

**E. ACQUISITION STRATEGY:**

A OMNIBUS contract was awarded for the TB-29A development effort to Lockheed Martin Integrated Systems , Bethesda, MD using full and open competition and 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 FY03 to support a Milestone III Release to Fleet (RTF) decision for TB-29(A). The next R&D phase for sustaining access with towed systems is the development of a highly reliable and more affordable fiber optic TB-29 variant towed array which uses fiber optic sensor technology for data collection and moves all outboard electronics from the array to inboard the submarine where they can be easily maintained. Cost savings in array production will be gained by using automated production techniques and significantly reducing or eliminating the "hand touch" labor common to today's towed array production methods because of the number of different electronics that must be wired together to achieve the acoustic capabilities necessary to meet today's and tomorrow's threats.

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.

A Sole Source Cost Plus Award Fee contract with multiple option years ending in FY 2002 was awarded to Lockheed Martin, Syracuse in 1996 for AN/BSY-2 support. A one year contract extension until December 2003 was recently negotiated.

R-1 SHOPPING LIST - Item No. 11112

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvements
<p><b>F. Major Performers</b></p> <p><b>Lockheed Martin Corporation, Naval Electronics and Surveillance Systems-Undersea Systems; Manassas, Virginia</b> - Provides primary hardware development, software integration and systems engineering support for Advanced Processor Builds for SSN 688, 688 I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.</p> <p><b>Digital System Resources, Inc; Fairfax, Virginia</b> - Provides primary software development for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.</p> <p><b>Naval Undersea Warfare Center, Newport, Rhode Island</b> - Provides systems engineering support for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Work Requests to be issued October each fiscal year.</p> <p><b>Chesapeake Science Corporation, Millersville, Maryland:</b> Provides primary hardware development, software integration and systems engineering support for the Affordable Towed Array Technology Initiatives. Contract awards projected for October each fiscal year.</p>		

R-1 SHOPPING LIST - Item No. 112

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604503N/Submarine Systems Equipment Development			F0219/Submarine Sonar Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Lockheed Martin (Omnibus)	14.187								14.187	
Primary Hardware Development	Various	Chesapeake Sciences	7.480	4.111	10/02	9.375	10/03	3.856	10/04		24.822	
Primary Hardware Development	SS/CPAF	LMC, Manassas, VA	105.311	23.520	11/02	13.708	10/03	5.070	10/04		147.609	
Ancillary Hardware Development	SS/CP	ARL University of Texas	1.127	1.611	12/02	0.543	10/03	0.543	10/04		3.824	
Systems Engineering	WR	NUWC, Newport R.I.	83.037	12.233	11/02	5.781	10/03	5.723	10/04		106.774	
Systems Engineering	SS/CPAF	LMC, Syracuse N.Y.	5.763								5.763	
Systems Engineering	Various	Various	12.035	0.185	11/02						12.220	
Software Development	SS/CP	Progeny Systems		4.981	11/02						4.981	
Systems Engineering	WR	NSWC, Carderock MD	1.534	1.612	10/02	1.630	10/03	0.641	10/04		5.417	
Systems Engineering	SS/CP	John Hopkins APL	1.201	1.850	12/02	1.304	10/03	2.174	10/04		5.417	
Hardware/Software Development	Various	SBIR's	0.328	0.975	12/02						1.303	
Award Fees	SS/CPAF	LMC, Syracuse N.Y.	0.495								0.495	
Miscellaneous	Various	Various	9.402								9.402	
Hardware/Software Development	TBD	TBD		6.161	02/03						6.161	
Systems Engineering	SS/CP	LMC, Eagan,, Minn.		1.662	02/03						1.662	
Systems Engineering	WR	NSWC, Crane, IN		0.076	11/02						0.076	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			241.900	58.977		32.341		18.007		0.000	351.225	
Remarks:												

R-1 SHOPPING LIST - Item No. 112

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 22 of 58)



**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604503N/Submarine Systems Equipment Development			F0219/Submarine Sonar Improvement						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												0.000
Operational Test & Evaluation	WR	OPTEVFOR	0.109	0.942	12/02	0.796	10/03	0.815	10/04			2.662
Developmental/Operational T&E	Various	Various	6.118	0.100	12/02							6.218
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			6.227	1.042		0.796		0.815		0.000		8.880
Remarks:												
Contractor Engineering Support												0.000
Management Support Services	Various	Various	3.514	0.641	10/02	0.719	10/03	0.719	10/04			5.593
Program Management Support	SS/CP	Mitre	0.273	0.250	12/02	0.272	10/03	0.272	10/04			1.067
Travel	PD	NAVSEA	0.701	0.175	10/02	0.082	10/03	0.082	10/04			1.040
Transportation												0.000
SBIR Assessment												0.000
Subtotal Management			4.488	1.066		1.073		1.073		0.000		7.700
Remarks:												
Total Cost			331.380	71.961		65.071		30.384		0.000		498.796
Remarks:												

R-1 SHOPPING LIST - Item No. 112

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-5</b>										0604503N/Submarine Systems Equipment Development										F0219/Submarine Sonar Improvement												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				▲				▲				▲				▲				▲				▲				▲				▲
A-RCI & HF Upgrade Dev. A-RCI-(V)5 Development	Development completed in FY01				SBN 21				A-RCI-(V)5 Installation																							
SSGN Development	▲				▲				▲																							
APB I&T, Certification	APB-02				APB-03				APB-04				APB-05				APB-06				APB-07				APB-08				APB-09			
Tech Insertion Development, I&T, Certification	TI-02								TI-04								TI-06								TI-08							
<b>Test &amp; Evaluation Milestones</b>				▲				▲				▲				▲				▲				▲				▲				▲
Phase III Operational Test				▲				▲				▲				▲				▲				▲				▲				▲
Phase IV Operational Test				▲				▲				▲				▲				▲				▲				▲				▲
APB Test Readiness Reviews				▲				▲				▲				▲				▲				▲				▲				▲
APB Sea Tests	▲				▲				▲				▲				▲				▲				▲				▲			
<b>Production</b>																																
FY02																																
FY03																																
FY04																																
FY05																																
FY06																																
FY07																																
FY08																																

R-1 SHOPPING LIST - Item No. 112

(Exhibit R-2, page 10 of 47)

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

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																DATE: <b>February 2003</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604503N: SSN-688 and Trident Modernization								PROJECT NUMBER AND NAME F0219: Submarine Sonar Improvement																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
TB-29A Development	Eng. & Manufacturing Development																															
			▲					△																								
			LRIP III					MS III																								
<b>Test &amp; Evaluation Milestones</b>																																
Development Test		▲																														
Operational Test								△																								
DT-IIB																																
OT-IIB																																
<b>Procurementa</b>																																
LRIP I Completed																																
LRIP II Completed																																
LRIP III				▲	▲																											
Production Contract											△				△				△					△								
Deliveries	▲			▲	△			△			△			△					△					△								
	LRIP I Array				LRIP II Array				LRIP III				FY03 Array																			

R-1 SHOPPING LIST - Item No. 112

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

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604503N: SSN688 and Trident Modernization				PROJECT NUMBER AND NAME F0219: Submarine Sonar Improvement			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)		3Q						
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I) Completed								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery	ends 4Q							
Technical Evaluation (TECHEVAL)	2Q							
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)		3Q						
Low-Rate Initial Production II Delivery		ends 4Q						
IOC								
Full Rate Production (FRP) Decision		3Q						
Full Rate Production Start		4Q						

R-1 SHOPPING LIST - Item No. 112

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 28 of 58)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development			PROJECT NUMBER AND NAME F9070/MPP/SPB/A-RCI Model for Tactical Control Info MGMT				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>20.698</b>	<b>18.704</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21, SSGN 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. Acoustics Rapid COTS Insertion (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, SSGN 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 N772'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 N772 Business Plan funds the APB integration efforts with the Multi-Purpose Processor as well as the AN/BQQ-10 Sonar system beginning in FY02. AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F9070/MPP/SPB/A-RCI Model for Tactical Control Info MGMT

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	20.698	18.704		
RDT&E Articles Quantity				

Continued research, development, training and deployment of Multipurpose Processors (MPP's). The MPP development effort completed in FY02. Extends APB/MPP technology insertion to enable submarines to achieve Navy network-centric warfare objectives and to accelerate development and extend common processing efforts..

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F9070/MPP/SPB/A-RCI Model for tactical Control Info Mgmt

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 President's Budget	21.310	0.000	0.000	0.000
FY2004 President's Budget:	20.698	18.704	0.000	0.000
Total Adjustments	-0.612	18.704	0.000	0.000
Summary of Adjustments				
FY2002 SBIR (dtd 5-15-02)	-0.509			
Sec. 313 PL 107-206; Revised	-0.045			
Business Process reform		-0.076		
Economic Assumptions (Sec 813	-0.058	-0.107		
IT Cost Growth (Sec.8109)		-0.035		
MPP/APB/A-RCI Model for Tactic		19.125		
Inflation Savings		-0.203		
Subtotal	-0.612	18.704	0.000	0.000

Schedule:

The A-RCI TECHEVAL/OPEVAL schedule has been modified. A-RCI is currently in OPEVAL however not all test events have been completed due to the lack of test submarines.

Technical:

Not applicable

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N/Submarine Systems Equipment Development	PROJECT NUMBER AND NAME F0219/Submarine Sonar Improvements
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 214700 SSN Acoustics	106.007	211.757	206.418	189.487	188.553	238.330	294.289	263.986	Continuing	Continuing
OPN BLI 214705 SSN Acoustics Installation	11.477	30.785	59.005	43.070	45.337	32.938	47.864	46.422	Continuing	Continuing

**E. ACQUISITION STRATEGY:**

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 Digital System Resources. Program Review with Milestone Decision Authority was conducted in December 1999 granting approval for the FY00 production option.

**F. Major Performers:**

**Digital System Resources, Inc; Fairfax, Virginia** - Provides primary software development for SSN688, 688I, 21 and Virginia Class submarine sonar systems. Contract awards projected for October each fiscal year.

R-1 SHOPPING LIST - Item No. 11112

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROGRAM ELEMENT 0604503N/Submarine Systems Equipment Development				PROJECT NUMBER AND NAME F9070/MPP/SPB/A-RCI Model for Tactical Control Info Mgmt				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												0.000
Management Support Services												0.000
Program Management Support												0.000
Travel												0.000
Transportation												0.000
SBIR Assessment												0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			20.698	17.804		0.000				0.000	38.502	
Remarks:												

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-5</b>								0604503N/Submarine Systems Equipment Development								F9070/MPP/SPB/A-RCI Model for Tactical Control Info Mgmt																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				▲				▲				▲				▲				▲				▲				▲				▲
A-RCI & HF Upgrade Dev. A-RCI-(V)5 Development	Development completed in FY01				SBN 21				A-RCI-(V)5 Installation																							
SSGN Development	▲				▲				▲																							
APB I&T, Certification	APB-02				APB-03				APB-04				APB-05				APB-06				APB-07				APB-08				APB-09			
Tech Insertion Development, I&T, Certification	TI-02								TI-04								TI-06								TI-08							
<b>Test &amp; Evaluation Milestones</b>				▲				▲				▲				▲				▲				▲				▲				▲
Phase III Operational Test				▲				▲				▲				▲				▲				▲				▲				▲
Phase IV Operational Test				▲				▲				▲				▲				▲				▲				▲				▲
APB Test Readiness Reviews				▲				▲				▲				▲				▲				▲				▲				▲
APB Sea Tests	▲				▲				▲				▲				▲				▲				▲				▲			
<b>Production</b>																																
FY02																																
FY03																																
FY04																																
FY05																																
FY06																																
FY07																																
FY08																																

R-1 SHOPPING LIST - Item No. 112

(Exhibit R-2, page 10 of 47)

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

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System						
COST (\$ in Millions)		Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		27.209	2.695	17.355	9.096	27.096	39.011	28.151	20.191	20.177	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty												<b>0</b>

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

The Submarine Integrated Antenna System (SIAS) projects (X0742) provide: for the development and testing of submarine antennas designed to meet emerging submarine communications requirements of: (a) Improved frequency coverage and data rate capabilities of submarine antennas and their interface to the External Communications System (ECS), (b) Improved submarine antenna performance and data rate while the submarine is operating at speed and depth, (c) Antenna compatibility with new waveforms and receiver equipment, (d) Improved stealth capability of existing and future antennas and (e) Improved 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, 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) 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
OE-538/RFDACS	0.362	0.000	0.000	0.000
RDT&E Articles Quantity				

**FY02 ACCOMPLISHMENTS:** Completed development and testing of OE-538/RFDACS for OHIO class integration (\$.362).

	FY 02	FY 03	FY 04	FY 05
Advanced HDR/SubHDR P-3I	0.793	14.706	5.247	12.108
RDT&E Articles Quantity				

**FY02 ACCOMPLISHMENTS:** Performed trade off analysis to investigate application of new capabilities such as Ku/Ka-band coverage upgrade to SubHDR P3I or follow-on AdvHDR system. Initiated 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 (\$.793). **FY03:** Develop modifications to submarine EHF Follow-On-Terminal (FOT) to accommodate SHF capability and meet the high priority fleet requirement to provide a secondary global IP connectivity (\$12.000). Develop digital navigation interface for SubHDR system to support SSGN (\$2.706). **FY04:** Complete FOT development to provide secondary global IP connectivity (\$3.900). Complete the digital navigation interface development for the SubHDR system (\$1.347 ). **FY05:** Perform Ku-Band system definition. Begin Ku-Band ECP development for both SubHDR Mast and Terminal (\$12.108).

	FY 02	FY 03	FY 04	FY 05
SubHDR for OHIO	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
On-Hull ELF	0.000	0.000	0.000	1.402
RDT&E Articles Quantity				

**FY05:** Perform system definition (\$.212) Begin system development including hardware design, software development, and integration assessments (\$1.190).

	FY 02	FY 03	FY 04	FY 05
Comms at Speed and Depth	0.000	0.000	0.190	8.338
RDT&E Articles Quantity				

**FY04 ACCOMPLISHMENTS:** Begin systems definition (\$.190). **FY05:** Complete system definition including system specification development, system concept development, multi-class ship alteration assessment, risk reduction studies, and technology insertion studies (\$2.985). Begin system development including deployment system development, software development, system testing, and documentation development (\$5.353).

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Antenna Transition Engineering	1.540	2.649	3.659	5.248
RDT&E Articles Quantity				

**FY02 ACCOMPLISHMENTS:** Provided continued program definition, system specifications, and risk reduction to the next generation antenna systems, AdvHDR, and Advanced Bouyant Cable (AdvBCA). Continued 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. Continued 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 (\$1.540). **FY03:** 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 (\$2.649). **FY04:** Continue to provide emerging requirements and Satellite Communications Database/Link analysis for other development programs including (i.e. MUOS/ANS, PCS/MCSS Commercial, WGS/AWS, Advanced EHF, and Wideband Commercial) (\$1.022). Continue P3I investigations and development efforts for legacy antenna systems (\$.950). Continue concept engineering efforts, new technology evaluations and assessments in support of current and future submarine antenna applications (\$1.687). **FY05:** Continue to provide emerging requirements and Satellite communications Database/Link analysis for other development programs (i.e. MUOS/ANS, PCS/MCSS Commercial, WGS/AWS, Advanced EHF, and Wideband Commercial (\$1.071). Continue P3I investigations and development efforts for legacy antenna systems (\$1.726). Continue concept engineering, new technology evaluations and assessments in support of current and future submarine antenna applications (\$2.451).

	FY 02	FY 03	FY 04	FY 05

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 President's Budget:	2.885	17.757		
FY2004 President's Budget	2.695	17.355	9.096	27.096
Total Adjustments	-0.190	-0.402	9.096	27.096
Summary of Adjustments				
SBIR/STTR Transfer	-0.037	0.000		
Economic Assumptions	-0.095	-0.100		
Inflation adjustment	0.000	-0.188		
Misc Navy Adjustments	-0.058	-0.114		
Subtotal	-0.190	-0.402	0.000	0.000

(U) Schedule:

- 1) OE-538/BRC: RFDAC ACU Variant will begin installations with the OE-538 multi-function mast in FY 03.

(U) Technical:

Not Applicable

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA5</b>			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604503N SSN 688 & TRIDENT MODERNIZATION				<b>PROJECT NUMBER AND NAME</b> X0742 Submarine Integrated Antenna System			
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3130000 Submarine Communications	87.177	120.291	104.935	161.954	149.624	138.116	169.545	168.880	Continue	Continue
<p>Related RDT&amp;E:            PE 0602232N Space and Electronic Warfare (SEW) Technology            PE 0303109N Satellite Communications - Provides for the EHF transmitter and receiver that utilized the antenna developed under this program.</p>										
<b>(U) E. ACQUISITION STRATEGY: *</b>										
<p>Program Milestones: FY 2005 2Q Comms at Speed and Depth MS-A; FY 2005 1Q On-Hull ELF MS-A            T&amp;E Milestones: FY 2002 4Q OE-538 FOT&amp;E; FY 2003 SubHDR 4Q FOT&amp;E            Contract Milestones: FY 2005 Ku Band Upgrade Contract Award, 3Q</p>										
<b>(U) F. MAJOR PERFORMERS: **</b>										
Not Applicable.										
<p>* Not required for Budget Activities 1,2,3, and 6            ** Required for DON and OSD submit only.</p>										

R-1 SHOPPING LIST - Item No. 112

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604503N SSN 688 & TRIDENT MODERNIZATION				X0742 Submarine Integrated Antenna System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Digital Interface Development (HDR)	CPAF	Raytheon Marlboro, MA		2.452	02/03	0.697	01/04					
Hardware Development (HDR)	WX	NUWC Newport, RI	7.674	0.000	Various	0.000	Various	0.000	Various	Complete	Complete	7.674
Hardware Development (HDR SHF)	CPFF	Raytheon Marlboro, MA		12.000	Various	3.900	Various				15.900	
Hardware Development (Ka)	CPFF	Raytheon Marlboro, MA						10.299	Various	Continuing	Continuing	Continuing
Systems Dev Engineering (On-Hull)	TBD	TBD						1.380	Various	Continuing	Continuing	Continuing
Systems Dev Engineering (Commx)	TBD	TBD						2.843	Various	Continuing	Continuing	Continuing
Systems Engineering (HDR)	WX	NUWC Newport, RI	4.962	0.000	Various	0.000	Various	0.000	Various	Complete	Complete	4.962
Systems Engineering (Trans Eng)	WX	NUWC Newport, RI		1.514	Various	3.303	Various	5.171	Various	Continuing	Continuing	Continuing
Systems Dev Engineering (On-Hull)	WX	NUWC Newport, RI				0.000	Various	0.441	Various	Continuing	Continuing	Continuing
Systems Dev Engineering (Commx)	CPFFWX	Industry				0.190	Various	5.505	Various	Continuing	Continuing	Continuing
											0.000	
Subtotal Product Development			12.636	15.966		8.090		25.639		Continuing	Continuing	Continuing
Remarks:												
Development Support											0.000	
Software Development	WX	NUWC Newport, RI		0.339	Various	0.356	Various	0.357	Various	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	Various	0.255	0.200	Various	0.200	Various	0.200	Various	Continuing	Continuing	Continuing
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.255	0.539		0.556		0.557		Continuing	Continuing	
Remarks:												



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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604503N SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	1.167									1.167
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			1.167	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												0.000
Government Engineering Support												0.000
Program Management Support	Various	Various	0.847	0.850	Various	0.450	Various	0.900	Various	Continuing	Continuing	
Travel												0.000
Transportation												0.000
SBIR Assessment												0.000
Subtotal Management			0.847	0.850		0.450		0.900		Continuing	Continuing	
Remarks:												
Total Cost			14.905	17.355		9.096		27.096		#VALUE!	#VALUE!	
Remarks:												

R-1 SHOPPING LIST - Item No. 112

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>											
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																					
<b>RDT&amp;E, N / BA-5</b>					PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION										X0742 Submarine Integrated Antenna System																					
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition (SubHDR) Milestones</b>																																				
Prototype Phase																																				
System Development																																				
EDM Delivery																																				
Software Delivery																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Technical Evaluation																																				
Operational Evaluation																																				
<b>Production Milestones</b>																																				
Full Rate Production Start-up																																				
Low-Rate Initial Production (LRIP) Start-up																																				
Low-Rate Initial Production (LRIP) Delivery																																				

R-1 SHOPPING LIST - Item No. 112

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

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# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>										PROGRAM ELEMENT NUMBER AND NAME PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION										PROJECT NUMBER AND NAME X0742 Submarine Integrated Antenna System												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition (Comms) Milestones</b>																																
AoA and ORD Development																																
System Development																																
EDM Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
LRIP I FY 08																																
LRIP II FY 09																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 112

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

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA5</b>	PE: 0604305N TITLE: SSN 688 & TRIDENT MODERNIZATION				X0742 Submarine Integrated Antenna System				
Schedule Profile (Comms)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
Approval of Validated ORD				1Q					
Analysis of Alternatives			3Q-4Q	1Q-2Q					
Milestone A & B Decision (MS A/B)				2Q					
System Design Review (SDR)				2Q					
Software Specification Review (SSR)				4Q					
Preliminary Design Review (PDR)					1Q				
System Development					1Q-3Q				
Critical Design Review (CDR)					3Q				
Test Readiness Review (TRR)						1Q			
Developmental Testing (DT-IIA)						1Q-3Q			
Eng Dev Model (EDM) - Lab 1 Delivery						3Q			
Software Delivery (1XXSW)					1Q-4Q	1Q-3Q			
Preproduction Readiness Review (PRR)							1Q		
EDM for LRIP - Delivery						4Q			
Milestone C (MS C)							1Q		
Developmental Testing (DT-IIB)						4Q			
Start Low-Rate Initial Production I (LRIP I)							2Q		
Software Delivery (2XXSW)						3Q-4Q			
Start Low-Rate Initial Production II								2Q	
Operational Testing (OT-IIA)								1Q-2Q	
Developmental Testing (DT-IIC)							2Q-4Q	1Q	
Functional Configuration Audit (FCA)								1Q	
Low-Rate Initial Production I Delivery								1Q	
Start Low-Rate Initial Production II (LRIP II)								2Q	

R-1 SHOPPING LIST - Item No. 112

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 49 of 58)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME X1411 Submarine Tactical Communications System					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	36.496	3.866	14.257	5.200	7.765	4.625	2.562	2.592	2.635	Continuing	Continuing
RDT&E Articles Qty											0

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

The Submarine Tactical Communications System project (X1411) 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) JUSTIFICATION FOR BUDGET ACTIVITY:**

This program is funded under SYSTEMS DEVELOPMENT AND DEMONSTRATION because it encompasses development and demonstration of new end-items prior to production approval decision.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X1411 Submarine Tactical Communications System

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Common Submarine Radio Room (CSRR)	2.526	12.601	4.344	6.946
RDT&E Articles Quantity				

**FY02 Accomplishments:** Completed design on baseline architecture of CSRR (\$1.380). Began OHIO unique hardware interface development including platform hull, mechanical and electrical interfaces. Also began unique OHIO software development (\$1.146). **FY03:** Continue design and integration efforts of CSRR for OHIO Class submarines (\$2.329). Begin Integration and Certification of Integration Test Facility (\$2.500). Complete development of unique OHIO software (\$2.300). Begin the CSRR conversion of the TRIDENT Land-Based Evaluation Facility into a CSRR configuration which will support all classes of submarines (\$4.500). Begin development of MLTS replacement (\$.972). **FY04:** Complete development of unique OHIO software and begin requirements definition of SSN688 CSRR software variant in support of SSN688 class submarines (\$.810). Continue development of MLTS replacement (\$.869). Continue INFOSEC certification of OHIO Class CSRR (\$.413). Complete transition engineering, integration and installation design in support of OHIO Class CSRR (\$2.252). **FY05:** Complete requirements definition for unique SSN688 OHIO Class software (\$.140). Continue design and integration efforts for 688 Class submarines (\$1.492). CSSR - Begin prime contractor software design efforts for 688 Class submarines (\$3.713). Begin CSRR curriculum development for Subschool (\$.537). Provide system engineering including operational, cost effectiveness studies and analysis in support of 688 Class submarines (\$1.064).

	FY 02	FY 03	FY 04	FY 05
BCA OPCON architecture	0.000	0.856	0.856	0.819
RDT&E Articles Quantity				

**FY03 Accomplishments:** Begin system engineering supporting BCA/OPCON architecture (\$.856). **FY04:** Continue system engineering supporting BCA/OPCON architecture (\$.856). **FY05:** Continue system engineering supporting BCA/OPCON architecture (\$.819).

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604503N SSN 688 & TRIDENT MODERNIZATION	PROJECT NUMBER AND NAME X1411 Submarine Tactical Communications System

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Submarine Communications Support System (SCSS)	0.840	0.000	0.000	0.000
RDT&E Articles Quantity				

**FY02 Accomplishments:** Continued OPEVAL of SCSS on Los Angeles class submarine (platform schedule and availability changed due to Sept 11 events. Schedule and availability to support OPEVAL finalized in March 02) (\$.840).

	FY 02	FY 03	FY 04	FY 05
Multi-functional Crypto System (MCS)	0.500	0.800	0.000	0.000
RDT&E Articles Quantity				

**FY02 Accomplishments:** Continued development of Multi-functional Crypto System (MCS) (\$.500). **FY03:** Complete testing and certification of Multifunction Crypto System (MCS). INFOSEC certification of CSRR is a follow-on task to installing the MCS in the Radio Room System (\$.800).

	FY 02	FY 03	FY 04	FY 05
	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604503N SSN 688 & TRIDENT MODERNIZATION	X1411 Submarine Tactical Communications System

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Fy2003 President's Budget:	4.199	14.635		
FY2004 President's Budget	3.866	14.257	5.200	7.765
Total Adjustments	-0.333	-0.378	5.200	7.765
Summary of Adjustments				
SBIR/STTR Transfer	-0.054			
Economic Assumptions	-0.137	-0.109		
Business Process Reform	0.000	-0.058		
FFRDC reduction	-0.074	-0.056		
Inflation Adjustment	0.000	-0.155		
Misc Navy Adjustments	-0.068			
Subtotal	-0.333	-0.378	0.000	0.000

(U) Schedule:  
Not Applicable.

(U) Technical:  
Not Applicable

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA5</b>			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604503N SSN 688 & TRIDENT MODERNIZATION				<b>PROJECT NUMBER AND NAME</b> X1411 Submarine Tactical Communications System			
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
3130000 Submarine Communications	87.177	120.291	104.935	161.954	149.624	138.116	169.545	168.88	Continue	Continue
<p>Related RDT&amp;E:                  PE 0602232N Space and Electronic Warfare (SEW) Technology                  PE 0204163N Fleet Communications</p>										
<b>(U) E. ACQUISITION STRATEGY:</b>										
<p>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. 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, and maximize use of COTS products and emerging technologies.</p> <p>Program Milestones: FY 2002 CSRR 4Q -MS-C                  T&amp;E Milestones: FY 2003 SCSS 2Q OT and CSRR 4Q DT/1Q FY 04 DT, FY 2004 CSRR 2Q DT, FY 2005 SSBN CSRR 2Q OPEVAL and SSN CSRR 4Q DT</p>										
<b>(U) F. MAJOR PERFORMERS</b>										
Not Applicable.										

R-1 SHOPPING LIST - Item No. 112

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604503N SSN 688 & TRIDENT MODERNIZATION			X1411 Submarine Tactical Communications System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Hardware Development*	CPFF	SSC-SD/NUWC Newport, RI	2.319	0.457		0.457	TBD	0.457	TBD		3.690	
Hardware Development**	CPFF	SSCs/NUWC Newport, RI	0.211							Continuing	Continuing	Continuing
MCS Development	Various	Motorola, misc labs	0.727	1.204	Various	0.413	TBD				2.344	
H/W Development Facilities	Various	NUWC Newport, RI									0.000	
Software Development	CPFFWX	SSC-SD San Diego, CA	1.763	2.135		0.800	TBD	0.140	TBD	2.000	6.838	
Software Development	WX	NUWC Newport, RI	5.498					2.856	TBD	Continuing	Continuing	Continuing
MLTS Replacement	CFCC	SPAWAR		0.611		0.869	TBD				1.480	
Systems Engineering	Various	Misc Labs	5.612	5.000	Various						10.612	Continuing
Site Platform Integration/Certification	Various	NUWC Newport, RI		3.094		1.505		1.853			6.452	
BCA/OPCON architecture	WX	NUWC Newport, RI		0.856		0.856		0.819			2.531	
Subtotal Product Development			16.130	13.357		4.900		6.125		Continuing	Continuing	Continuing
Remarks: * SCSS Development for SSN 688 Class submarines **CSRR Development for OHIO Class submarines												
Development Support Equipment*								1.050	TBD		1.050	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management								0.190			0.190	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											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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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604503N SSN 688 & TRIDENT MODERNIZATION			X1411 Submarine Tactical Communications System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	4.530								4.530	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			4.530	0.000		0.000		0.000		Continuing	Continuing	
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	3.690	0.900	Various	0.300	Various	0.400	Various	Continuing	Continuing	Continuing
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.690	0.900		0.300		0.400		Continuing	Continuing	
Remarks:												
Total Cost			24.350	14.257		5.200		7.765		Continuing	Continuing	
Remarks:												



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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT PE: 0604503N TITLE: SSN 688 & TRIDENT MODERNIZATION				PROJECT NUMBER AND NAME X1411 Submarine Tactical Communications System			
Schedule Profile (CSRR)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
CSRR SW/HW Requirements Definition	3Q							
System/Subsystem Specification	3Q-4Q							
Milestone A/B/C/LRIP 1	4Q							
Software Requirements Specification	4Q	1Q						
Lead Q-70 Hardware		1Q-3Q						
Software CDR		2Q						
Software Design Implementation		2Q-4Q						
Outfitting Q-70 Hardware		3Q-4Q						
Q-70 Hardware Checkout (ITF Set)		4Q	1Q					
ITF Installation Checkout of Entire System		4Q	1Q					
VA/CSRR Conformance/Reconciliation		4Q	1Q					
Interim Software Delivery #1			1Q					
ITF C&M Q-70 Subsystem Check			1Q					
ITF Subsystem Checks with Interim Software			1Q-2Q					
Software FAT			1Q-2Q					
SSBN TRID Submittal (Draft)			1Q					
ITF System Level & Interface Checks (Collect Metrics)			2Q-3Q					
SSBN TRID Submittal (Preliminary)			1Q					
ITF Stress and Degraded Modes Tests (Collect Metrics)			2Q-3Q					
ITF Operational Environments Test - (EMI/EMC/thermal)			3Q					
Assessment of System Maturity / HSE Readiness			3Q					
Operational Test Readiness Review (OTRR)			3Q					
ITF HSE (Hardware/Software Evaluation)			3Q					
CSRR Operational Assessment			3Q					
CSRR JTIC (Joint Interoperability Test and Certification)			3Q					
SSBN TRID Submittal (Final)			3Q-4Q					
CSRR Strategic Certification Test			3Q-4Q					
SSBN TRID Approval			4Q					
Fleet Software Delivery			4Q					
STRATCOM/JCS Review & STRATCOM CERT Approval			4Q					
Final TRID Approval			4Q					
CSRR SSBN OT&E				3Q-4Q				
LRIP 2			4Q	1Q				
CSRR SSBN IOC (Initial Operating Capability)					2Q			
Full Rate Production					2Q			

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604504N AIR CONTROL ENGINEERING			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	13.213	4.841	10.472	7.357	6.724	2.846	2.900	2.953
W0718 MARINE AIR TRAFFIC CONTROL AND LANDING SYSTEMS (MATCAL)	8.508	1.631	5.347	4.698	4.801	0.870	0.885	0.902
W0993 SHIPBOARD AIR TRAFFIC CONTROL SYSTEMS	2.504	2.907	4.824	2.321	1.540	1.541	1.572	1.601
W1657 SHORE AIR TRAFFIC CONTROL (ATC) SYSTEMS	2.201	0.303	0.301	0.338	0.383	0.435	0.443	0.450

**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 system capabilities at Naval Air Stations and Marine Corps Air Stations and Fleet Area Control & Surveillance Facilities (FACSFAC) worldwide. Funded programs are required to upgrade or replace aging ATC and landing system 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. This program element will also fund the development of a Global Positioning System data link to enable the transfer of precise positioning information between ships and aircraft.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING			PROJECT NUMBER AND NAME W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)				
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>8.508</b>	<b>1.631</b>	<b>5.347</b>	<b>4.698</b>	<b>4.801</b>	<b>0.870</b>	<b>0.885</b>	<b>0.902</b>
RDT&E Articles Qty									
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> This program provides for continued development, integration, and testing of hardware and software to meet requirement for all-weather operation and improved flight safety of Air Traffic Control and Landing Systems at Navy/Marine Corps expeditionary airfields. Current program includes approved transition to Phase I for the Air Surveillance and Precision Approach Radar Control System (ASPARCS). The ASPARCS will replace the legacy Air Traffic Control (ATC) Precision Approach Radar (PAR), Air Surveillance Radar (ASR), and Communications and Control Subsystem with a High Mobility Multipurpose Wheeled Vehicle based PAR, ASR, and Operational Subsystem/Communication Subsystem. ASPARCS Phase II is for the Preplanned Product Improvements.</p>									

R-1 SHOPPING LIST - Item No.

113

# UNCLASSIFIED

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 2 of 25)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.710			
RDT&E Articles Quantity				

Provided final incremental funding for the First Article systems integration and demonstration of the Air Surveillance Radar and Precision Approach Radar System (ASPARCS).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.658	1.631	0.132	0.062
RDT&E Articles Quantity				

Perform systems engineering functions in support of the ASPARCS program. This effort includes preparation of Developmental Test/Operational Test (DT/OT) plans for Phase I and Phase II ASPARCS, completing ASPARCS Phase I DT(OT), and technical oversight of the ASPARCS program.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.000			
RDT&E Articles Quantity				

Developed technology for the Transportable Transponder Landing System (TTLS).

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)
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**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.140			
RDT&E Articles Quantity				

Continued management support to the program office for the development of the ASPARCS.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			3.546	3.033
RDT&E Articles Quantity				

Design and develop software code to interface Tactical Digital Information Link (TADIL-J) input/output to existing ASPARCS Phase I software; design changes to existing ASPARCS software to achieve Defense Information Infrastructure-Common Operating Environment (DII-COE) level 5 compliance. In addition, incorporate National Imagery Mapping Agency (NIMA) functionality, and enhanced simulation and training into the existing ASPARCS software.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.669	1.603
RDT&E Articles Quantity				

Perform design efforts to integrate the Multi Function Information Distribution System (MIDS) data link terminal into the ASPARCS Phase II system.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		7.988	1.668	1.194	0.914
Current BES/President's Budget		8.508	1.631	5.347	4.698
Total Adjustments		0.520	-0.037	4.153	3.784
Summary of Adjustments					
Congressional program reductions		-0.213			
Congressional undistributed reductions			-0.010		
Congressional rescissions		-0.017			
SBIR/STTR Transfer		-0.073			
Economic Assumptions		-0.024	-0.027	-0.138	-0.109
Reprogrammings		-0.004			
Other Navy/OSD Adjustments		0.851		4.291	3.893
Congressional increases					
Subtotal		0.520	-0.037	4.153	3.784
Schedule:					
ASPARCS Phase I DT, OT and MS III slipped due to the redesign of the Precision Approach Radar (PAR) to accommodate Air Force (AF) requirements funding and Congressional direction to fund the TTLS .					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 113

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-5</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604504N AIR CONTROL ENGINEERING			<b>PROJECT NUMBER AND NAME</b> W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)						
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 281500, MATCAL	0.978	7.680	15.629	15.663	19.677	20.208	19.726	17.204	Continuing	Continuing
<b>E. ACQUISITION STRATEGY: *</b>										
<p>Air Surveillance and Precision Approach Radar System (ASPARCS) is an ACAT IVT program. Lockheed Martin was awarded the contract for this effort in June of 2000. This effort included First Article development (Fixed Price Incentive) with (Firm Fixed Priced) production options. The Lockheed Martin contract includes a Cost Plus Fixed Fee option for Phase II of the program. Phase II will include the development of the Common Aviation Command &amp; Control System interoperability capability, the National Imagery Mapping Agency (NIMA) capability, and an enhanced training capability. The Operational Subsystem/Communication Subsystem (OS/CS) is being developed and integrated as a joint Lockheed /Naval Air Warfare Center, Aircraft Division (NAWC AD) effort. The first article and production OS/CS will be produced by NAWC AD.</p>										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604504N AIR CONTROL ENGINEERING			W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Devel Phase I	C/FFP	Lockheed Martin	13.806								13.806	13.806
Primary Hardware Devel Phase II	C/CPFF	Lockheed Martin				0.870	11/03	0.884	11/04	0.434	2.188	2.188
Training Development	WX	NAWCAD S.I.	0.175							0.000	0.175	
Systems Engineering	WX	NAWCAD S.I.	5.131			0.601	11/03	0.617	11/04	Continuing	Continuing	
Ancillary Hardware Deveopment	SS/FFP	Rockwell Collins	0.424								0.424	0.424
Primary Hardware Devel TTLS	FFP	ANPC	2.000								2.000	2.000
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			21.536	0.000		1.471		1.501		Continuing	Continuing	
Remarks:												
Software Development	C/CPFF	Lockheed Martin				2.549	11/03	2.006	11/04	1.224	5.779	5.779
Software Development	WX	NAWCAD S.I.				0.716	11/03	0.351	11/04	0.417	1.484	
Integrated Logistics Support	WX	NAWCAD S.I.	0.236			0.100	11/03	0.100	11/04	Continuing	Continuing	
Configuration Management	WX	NAWCAD S.I.	0.353								0.353	
Technical Data	WX	NAWCAD S.I.	0.394			0.085	11/03	0.085	11/04	Continuing	Continuing	
Development Support MATCAL	WX	NAWCAD S.I.	0.205								0.205	
											0.000	
											0.000	
Subtotal Support			1.188	0.000		3.450		2.542		Continuing	Continuing	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDTE, N / BA-5</b>			0604504N AIR CONTROL ENGINEERING				W0718 MARINE AIR TRAFFIC CONTROL & LANDING SYSTEM (MATCAL)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD S.I.	0.286	1.428	11/02	0.100	11/03	0.400	11/04	1.745	3.959	
Operational Test & Evaluation	WX	MCOTEA	0.342	0.070	11/02	0.145	11/03	0.075	11/04	0.160	0.792	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.628	1.498		0.245		0.475		1.905	4.751	
Remarks:												
Program Management Support	WX	NAWCAD S.I.	0.212	0.133	11/02	0.151	11/03	0.150	11/04	Continuing	Continuing	
Travel	WX	NAVAIR	0.081	0.000	11/02	0.030	11/03	0.030	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.293	0.133		0.181		0.180		Continuing	Continuing	
Remarks:												
Total Cost			23.645	1.631		5.347		4.698		Continuing	Continuing	
Remarks:												







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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING			PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>2.504</b>	<b>2.907</b>	<b>4.824</b>	<b>2.321</b>	<b>1.540</b>	<b>1.541</b>	<b>1.572</b>	<b>1.601</b>
RDT&E Articles Qty	<b>2</b>	<b>2</b>	<b>1</b>					

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** Shipboard Air Traffic Control Central systems, 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 AN/SPN-46 ACLS and AN/SPN-41 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 also requires development of an interface with the Battle Force Tactical Trainer. The AN/SPN-41/41A transmitter requires redesign to improve reliability. The AN/SPN-46 radar currently functions in cooperation with an active beacon on the controlled aircraft, and this beacon has an obsolescence problem. 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 (ECP) 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. Because 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 two field changes. 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. The development of a common console will reduce operational costs, improve reliability, and provide compatible interfaces and commonality for all ATC workstation

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
AN/SPN-43 Upgrade	0.184	0.900	2.995	0.798
RDT&E Articles Quantity			1	

Conducted analysis of alternatives for AN/SPN-43C replacement/upgrade in FY02. Initiate development of one SPN-43C replacement (article) in FY03 and continue through FY05.

	FY 02	FY 03	FY 04	FY 05
Shipboard testing for AN/SPN-35C.	1.202		0.065	
RDT&E Articles Quantity				

Completed shipboard testing (DT-IIC) and safety certification for AN/SPN-35C radar upgrade in FY02. Conduct OPEVAL support in FY04.

	FY 02	FY 03	FY 04	FY 05
AN/SPN-46 Unit 19		1.029	0.070	
RDT&E Articles Quantity		1		

Complete development of AN/SPN-46 Unit 19 redesign ECP (for prior development, see under W1657) in FY03 and test it in FY04. The article represents a VME Cage that replaces SEM cards in the Unit 19.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
AN/SPN-46 AYK-14 Processor Software			0.109	0.997
RDT&E Articles Quantity				

Initiate conversion of AN/SPN-46 AYK-14 processor software from CMS to "C" language in FY04 and continue through FY05.

	FY 02	FY 03	FY 04	FY 05
AN/SPN-46 Miscellaneous ECPs	0.138	0.030		
RDT&E Articles Quantity	1			

Completed development of AN/SPN-46 Test Support Fixtures ECP and AN/SPN-46 Power Monitor (article) ECP in FY02. Continued development of AN/SPN-46 X-Band Calibration ECP in FY02 and conduct testing in FY03.

	FY 02	FY 03	FY 04	FY 05
AN/TPX-42 Improvements	0.980	0.948	0.938	
RDT&E Articles Quantity	1	1		

Initiated and completed development of AN/TPX-42 Flat Panel Display (article) ECP in FY02. Continue development of AN/TPX-42 Track Processor (article) Upgrade ECP (for prior development, see under W1657) in FY03 and conduct testing in FY04.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
AN/SPN-41 Miscellaneous Upgrades			0.647	0.526
RDT&E Articles Quantity				

Initiate redesign of AN/SPN-41 transmitter assembly in FY04 and continue it through FY05. Initiate development of AN/SPN-41 Electronic Drawer Assembly Upgrade ECP in FY05.

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
FY 2003 President's Budget:		2.389	2.973	4.961	2.382
FY 2004-2005 President's Budget		2.504	2.907	4.824	2.321
Total Adjustments		0.115	-0.066	-0.137	-0.061
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.017		
Congressional rescissions		-0.005			
SBIR/STTR Transfer		-0.012			
Economic Assumptions		-0.007	-0.049	-0.132	-0.059
Reprogrammings		0.139			
Other Navy/OSD Adjustments				-0.005	-0.002
Congressional increases					
Subtotal		0.115	-0.066	-0.137	-0.061
Schedule:					
New milestones for AN/SPN-46 X-Band Calibration ECP are for an emergent requirement. The AN/SPN-41 Transmitter Upgrade is a new start. The AN/SPN-43 MTD development has been deferred and its milestones deleted, pending the results of the AN/SPN-43 Replacement or Upgrade development program. Milestones for AN/SPN-46 Power Monitor ECP have been slipped by one to two quarters to accommodate reprioritization of other projects.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 113

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 283200 Automatic Carrier Landing Systems	16.090	11.500	17.493	16.308	17.971	18.565	18.908	19.253	Continuing	Continuing
OPN BLI 283100 Shipboard Air Traffic Control	7.822	7.651	7.860	7.704	8.087	8.242	8.393	8.544	Continuing	Continuing

**E. 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).

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.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604504N AIR CONTROL ENGINEERING			W0993, Shipboard Air Traffic Control Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W Dev - SPN-35	WR	NAWCAD Pax River, MD	4.845							Continuing	Continuing	
Primary H/W Dev - SPN-41	WR	NAWCAD Pax River, MD	6.890			0.487	11/03	0.365	11/04	Continuing	Continuing	
Primary H/W Dev - SPN-43	WR	NAWCAD Pax River, MD	7.249	0.900	11/02	2.000	11/03	0.498	11/04	Continuing	Continuing	
Primary H/W Dev - SPN-46	WR	NAWCAD Pax River, MD	7.993	0.541	11/02	0.006	11/03			Continuing	Continuing	
Primary H/W Dev - TPX-42	WR	NAWCAD Pax River, MD	0.985	0.233	11/02	0.188	11/03	0.050	11/04	Continuing	Continuing	
Training Development - SPN-35	C/T&M	IDSI Pax River, MD	0.030	0.030	12/02	0.030	12/03	0.030	12/04	Continuing	Continuing	
Training Development - SPN-46	C/T&M	IDSI Pax River, MD	0.090	0.030	12/02	0.030	12/03	0.030	12/04	Continuing	Continuing	
Training Development - TPX-42	C/T&M	IDSI Pax River, MD		0.030	12/02	0.030	12/03	0.030	12/04	Continuing	Continuing	
												0.000
												0.000
												0.000
Subtotal Product Development			28.082	1.764		2.771		1.003		Continuing	Continuing	
Remarks:												
Software Development - SPN-43	WR	NAWCAD Pax River, MD				0.898	11/03	0.897	11/04	Continuing	Continuing	
Software Development - SPN-46	WR	NAWCAD Pax River, MD		0.287	11/02		11/03		11/04	Continuing	Continuing	
Software Development - TPX-42	WR	NAWCAD Pax River, MD		0.565	11/02					Continuing	Continuing	
Integrated Log Spt - SPN-43	WR	NAWCAD Pax River, MD				0.495	11/03	0.300	11/04	Continuing	Continuing	
Integrated Log Spt - SPN-46	WR	NAWCAD Pax River, MD		0.072	11/02	0.005	11/03	0.050	11/04	Continuing	Continuing	
Integrated Log Spt - TPX-42	WR	NAWCAD Pax River, MD		0.150	11/02	0.075	11/03			Continuing	Continuing	
Studies & Analyses - SPN-43	WR	NAWCAD Pax River, MD	0.306									0.306
												0.000
Subtotal Support			0.306	1.074		1.473		1.247		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604504N AIR CONTROL ENGINEERING			W0993, Shipboard Air Traffic Control Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval - SPN-35	WR	NAWCAD Pax River MD	0.623								0.623	
Developmental Test & Eval - SPN-46	WR	NAWCAD Pax River MD				0.070	11/03				0.070	
Developmental Test & Eval - TPX-42	WR	NAWCAD Pax River MD				0.375	11/03				0.375	
Operational Test & Eval - SPN-35	WR	NAWCAD Pax River MD				0.065	11/03				0.065	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.623	0.000		0.510		0.000			1.133	
Remarks:												
Program Management Support	C/Cost	NTA Patuxent River MD	1.134	0.039	11/02	0.040	11/03	0.041	11/04	Continuing	Continuing	
Travel	WR	NAWCAD Pax River MD		0.030	11/02	0.030	11/03	0.030	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal Management			1.134	0.069		0.070		0.071		Continuing	Continuing	
Remarks:												
Total Cost			30.145	2.907		4.824		2.321		Continuing	Continuing	
Remarks:												



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EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING										PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Prototype Phase																																
Radar System Development					SDR	PDR					CDR				PRR																	
EDM Radar Delivery															Lab	Flt Rel																
															1	2																
Software 1XXSW Delivery 2XXSW Delivery					SSR																											
<b>Test &amp; Evaluation Milestones</b>																																
Development Test															TRR																	
Operational Test															DT-IIA																	
<b>Production Milestones</b>																																
LRIP I FY 05																																
LRIP II FY 06																																
FRP FY 07																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 113

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

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT 0604504N AIR CONTROL ENGINEERING				PROJECT NUMBER AND NAME W0993, Shipboard Air Traffic Control Systems			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)		1Q						
Milestone II (MSII)								
Contract Preparation		1Q						
Software Specification Review (SSR)		1Q						
Preliminary Design Review (PDR)		1Q						
System Development			1Q-3Q					
Critical Design Review (CDR)			3Q					
Quality Design and Build			4Q	1Q-2Q				
Test Readiness Review (TRR)				3Q				
Developmental Testing (DT-IIA)				3Q				
Eng Dev Model (EDM) Radar Delivery - Lab				3Q				
Software Delivery 1XXSW				3Q				
Preproduction Readiness Review (PRR)				3Q				
EDM Radar Delivery - Flt Related				4Q				
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 113

## UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 20 of 25)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING			PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>2.201</b>	<b>0.303</b>	<b>0.301</b>	<b>0.338</b>	<b>0.383</b>	<b>0.435</b>	<b>0.443</b>	<b>0.450</b>
RDT&E Articles Qty								

**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 communication systems for Naval and Marine Corps Air Stations (NAS/MCAS) and Fleet Area Control and Surveillance Facilities (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 with usage of digital technology in communications, displays, etc. The Navy must maintain compatibility with FAA developed ATC systems in order to ensure seamless interoperability within the NAS. NAS modernization initiatives in Project W1657 include the Visual Information Display System (VIDS) and follow-on Pre-planned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf (COTS) ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & FACSFAC facilities worldwide. 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems

**(U) B. Accomplishments/Planned Program**

VIDS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.138	0.148	0.121	0.140
RDT&E Articles Quantity				

Continue engineering development and development of pre-planned product improvements for the Visual Information Display System.

FIBER OPTIC INTERSITE SYSTEM UPGRADE	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.078	0.065	0.074
RDT&E Articles Quantity				

Initiate research and development efforts required for the Fiber Optic Intersite System (FOIS) Upgrade.

NEXT GENERATION COMMUNICATION SYS UPG	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.145	0.077	0.065	0.074
RDT&E Articles Quantity				

Begin initial research & development efforts required for the Next Generation Communication System Upgrade.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems

**(U) B. Accomplishments/Planned Program (Cont.)**

FACSFAC	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.050	0.050
RDT&E Articles Quantity				

Initiate research efforts to determine the best technical approach to integrate various data link and communication system upgrades into the FACSFAC System

ACLS Improvements	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.907			
RDT&E Articles Quantity				

Continued development of AN/SPN-46 Unit 19 redesign.

AN/TPX-42 Improvements	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.011			
RDT&E Articles Quantity				

Initiated integration of Track Processor into TPX-42 system.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W1657, SHORE AIR TRAFFIC CONTROL SYSTEM
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
FY 2003 President's Budget:	2.331	0.310	0.310	0.347
FY 2004-2005 President's Budget	2.201	0.303	0.301	0.338
Total Adjustments	-0.130	-0.007	-0.009	-0.009

Summary of Adjustments

Congressional program reductions				
Congressional undistributed reductions		-0.002		
Congressional rescissions	-0.005			
SBIR/STTR Transfer	-0.017			
Economic Assumptions	-0.006	-0.005	-0.007	-0.006
Reprogrammings	-0.102			
Other Navy/OSD Adjustments			-0.002	-0.003
Congressional increases				
Subtotal	-0.130	-0.007	-0.009	-0.009

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604504N AIR CONTROL ENGINEERING	PROJECT NUMBER AND NAME W1657, Shore Air Traffic Control Systems
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 284000 National Air Space System	20.798	4.893	30.095	29.810	34.902	27.959	28.467	28.891	Continuing	Continuing
OPN BLI 284500 Air Station ATC Equip	7.223	6.866	7.633	7.344	7.611	7.762	7.902	8.046	Continuing	Continuing
OPN BLI 284600 Microwave Landing System	5.266	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
OPN BLI 284700 FACSFAC	1.120	4.265	4.337	4.279	4.491	4.632	4.684	4.784	Continuing	Continuing
OPN BLI 283100 Shipboard Air Traffic Control	7.822	7.651	7.860	7.704	8.087	8.242	8.393	8.544	Continuing	Continuing
OPN BLI 283200 ACLS	16.090	11.500	17.493	16.308	17.971	18.565	18.908	19.253	Continuing	Continuing

NOTE: BLI 283100, 283200, and 284600 no longer applicable after FY 2002.  
Related RDT&E Not Applicable

**E. 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.

**F. MAJOR PERFORMERS:**

N/A

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME Q1440 / Enhanced Modular Signal Processor			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.972</b>	<b>0.502</b>	<b>1.006</b>	<b>1.085</b>	<b>1.103</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The objective of this Program Element (PE) is to improve Navy Signal Processing Hardware and Software Capabilities.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME Q1440 / Enhanced Modular Signal Processor

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
AN/UYS-X Portable Test Set	0.880	0.502		
RDT&E Articles Quantity				

Designed, developed and began integration of a portable AN/UYS-X test set to support AN/UYS-1 and AN/UYS-2/2A platform system integration activities.

	FY 02	FY 03	FY 04	FY 05
VSIPL Version 1.02	0.092			
RDT&E Articles Quantity				

Delivered Vector Signal Processing Library (VSIPL) Application Programming Interface (API) version 1.02.

	FY 02	FY 03	FY 04	FY 05
PDOS Development			0.230	0.250
RDT&E Articles Quantity				

Portable Digital Signal Processing Operating System (PDOS) , associated tool set that support development of reusable signal processing application software.

R-1 SHOPPING LIST - Item No. 114

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME Q1440 / Enhanced Modular Signal Processor

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Legacy Host Computer Replacement of AN/UYS-1/2/2A			0.776	0.835
RDT&E Articles Quantity				

Investigate and commence replacement of AN/UYS-1/2/2A legacy host computer resources which are obsolete, unreliable and unsupported.

R-1 SHOPPING LIST - Item No. 114

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME Q1440 / Enhanced Modular Signal Processor
--	--	--

**C. PROGRAM CHANGE SUMMARY:**

	FY 2002	FY 2003	FY 2004	FY2005
Previous President's Budget: (FY03 Pres Controls) :	1.093	0.513	1.335	1.341
Current BES/President's Budget: (FY04 President Controls)	0.972	0.502	1.006	1.085
Total Adjustments	-0.121	-0.011	-0.329	-0.256
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions	-0.014	-0.006		
Congressional rescissions				
SBIR/STTR Transfer	-0.002			
Economic Assumptions/Rate Adjustments		-0.005	-0.022	-0.021
Reprogrammings	-0.105		-0.307	-0.235
Congressional increases				
Subtotal	-0.121	-0.011	-0.329	-0.256

Schedule:  
Not Applicable

Technical:  
Not Applicable

R-1 SHOPPING LIST - Item No. 114

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-05			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604507N / Enhanced Modular Signal Processor (EMSP)				<b>PROJECT NUMBER AND NAME</b> Q1440 / Enhanced Modular Signal Processor			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
2980 / Items Less Than \$5M (N61 NSP portion only)	1.3	0.0	0.3	0.4	0.6	0.0	0.0	0.0	0.0	2.6
<b>E. ACQUISITION STRATEGY:</b>										
Development work in this project is performed primarily by NAWC/Pax River and NAVSEA/Crane.										
<b>F. MAJOR PERFORMERS:</b>										
Naval Air Warfare Center/Patuxent River (NAWC/Pax River): EMSP Computer Program Support Activity (CPSA), Technical Design Agent Naval Sea Systems Command (NAVSEA/Crane): EMSP ISEA/Hardware Support Activity										

R-1 SHOPPING LIST - Item No. 114

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604507N / Enhanced Modular Signal Processor (EMSP)			Q1440 / Enhanced Modular Signal Processor						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Signal Processor COTS Technology	Var.	Var.	3.215							0.000	3.215	
Subtotal Product Development			3.215	0.000		0.000		0.000		0.000	3.215	
Remarks:												
Software Development	WR	NAWC/Pax River, MD	3.705	0.345	12/02	0.545	11/03	0.663	11/04	Continuing	Continuing	
Hardware Development	WR	NAVSEA/Crane, IN	0.307	0.132	12/02	0.439	11/03	0.400	11/04	Continuing	Continuing	
Common Processing	Var.	Var.	0.050								0.050	
Common Processing	MIPR	ARI, CT	0.225								0.225	
Subtotal Support			4.287	0.477		0.984		1.063		Continuing	Continuing	
Remarks:												


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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604507N / Enhanced Modular Signal Processor (EMSP)			Q1440 / Enhanced Modular Signal Processor						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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:												
Program Management Support	C/CPFF	TWD & Associates, VA	0.328	0.025	01/03	0.022	12/03	0.022	12/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.328	0.025		0.022		0.022		Continuing	Continuing	
Remarks:												
Total Cost			7.830	0.502		1.006		1.085		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-05</b>										0604507N / Enhanced Modular Signal Processor (EMSP)										Q1440 / Enhanced Modular Signal Processor												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Portable Test Set</b>																																
<b>Acquisition Milestones</b>																																
Develop/Design System Specs for Portable Test Set																																
Contract for Delivery of COTS Components																																
Develop COTS Version Interfaces																																
Develop SW Device Drivers																																
Develop SW for COTS																																
Fabricate/Integrate Systems																																
<b>Test &amp; Evaluation Milestones</b>																																
Conduct System Test																																
<b>Production Milestones</b>																																
Deliveries																																
NAVSEA/CRANE 																																

R-1 SHOPPING LIST - Item No. 114

**UNCLASSIFIED**

**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 8 of 13)





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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-05</b>								0604507N / Enhanced Modular Signal Processor (EMSP)								Q1440 / Enhanced Modular Signal Processor																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>PDOS and Tools</b>																																
<b>Acquisition Milestones</b>																																
PDOS & Tools Development, Research, Investigation																																
Develop PDOS Specification																																
Develop Prototype OS, Tools																																
Develop PDOS test suites																																
Develop Signal Processing benchmark																																
<b>Test &amp; Evaluation Milestones</b>																																
Demonstrated PDOS																																
<b>Production Milestones</b>																																
Work with Industry to Productize PDOS																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 114

# UNCLASSIFIED

**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 10 of 13)



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-05</b>								0604507N / Enhanced Modular Signal Processor (EMSP)								Q1440 / Enhanced Modular Signal Processor																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Legacy Host Computer Replacement</b>																																
<b>Acquisition Milestones</b>																																
AN/UYS-1 Investigate Legacy Computer Replacement																																
AN/UYS-2/2A Investigate Legacy Computer Replacement																																
AN/UYS-1 COTS Software Development																																
AN/UYS-2/2A COTS Software Development																																
<b>Test &amp; Evaluation Milestones</b>																																
AN/UYS-1 Validation Testing																																
AN/UYS-2/2A Validation Test																																
<b>Production Milestones</b>																																
AN/UYS-1 Contract for Delivery of Replacement host																																
AN/UYS-2/2A Contract for Delivery of Replacement host																																
<b>Deliveries</b>																																

R-1 SHOPPING LIST - Item No. 114

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**Exhibit R-4, Schedule Profile**  
(Exhibit R-4, page 12 of 13)



EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604512N Shipboard Aviation Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>16.684</b>	<b>26.031</b>	<b>18.352</b>	<b>25.255</b>	<b>23.231</b>	<b>18.828</b>	<b>19.184</b>	<b>19.539</b>
W2232 CV Launch & Recovery Systems	<b>14.974</b>	<b>24.075</b>	<b>18.352</b>	<b>25.255</b>	<b>23.231</b>	<b>18.828</b>	<b>19.184</b>	<b>19.539</b>
W9071 Shipboard Aviation Information Technology	<b>1.710</b>	<b>1.956</b>						

**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 includes the concept exploration and the development phase of the following systems under Projects W2232, and Project W9071 including the funding of Production Representative Models (PRM):

- (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 Landing Signal Officer Heads Up Display (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 designed to replace the Type F wind system on all U.S. Navy 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems

**(U) B. Accomplishments/Planned Program**

VISUAL	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.697	7.769	1.918	
RDT&E Articles Quantity		2	2	

**VISUAL**  
 Completed fabrication of two (2) CV/CVN PRM units and conducted integration/test efforts. Provided engineering and management support to the program. 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. Complete CV/CVN system operational testing. Deliver one (1) LH PRM Unit for shipboard testing. Modify and configure one of the CV components for delivery as one (1) LH PRM unit for lab testing. Conduct developmental and operational testing for LH system. Conduct MS C for CV and for LH systems.

MWS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.442	2.311	0.250	
RDT&E Articles Quantity		1		

**MWS**  
 Received MS B approval and awarded SDD contract. Completed PDR and provided engineering and management support to the program. Complete CDR and deliver one (1) MWS PRM. Initiate and complete developmental testing. Provide engineering management support for the program. Initiate and complete MWS operational testing. Receive MS C and FRP approval.

ALRCS	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.996			
RDT&E Articles Quantity				

**ALRCS**  
 Solicited industry for technology and system solutions. Prepared system technical specification requirements. Combined program with and folded efforts into Avanced Arresting Gear program. Provided engineering and management support to the program.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>14.974</b>	<b>24.075</b>	<b>18.352</b>	<b>25.255</b>	<b>23.231</b>	<b>18.828</b>	<b>19.184</b>	<b>19.539</b>
RDT&E Articles Qty		<b>3</b>	<b>2</b>					

**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 includes the system development phase of the following systems under Project W2232, including the funding of production representative models (PRM):

- (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): MWS 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems
---	--	---

**(U) B. Accomplishments/Planned Program**

AAG	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.764	13.811	16.184	25.255
RDT&E Articles Quantity				

**AAG**  
 Completed AoA and Technology Maturity Assessment. Prepared and received approval for Acquisition Strategy. Prepared and released RFP to Industry. Conduct source selection efforts. Prepare for and receive milestone A approval and award Concept Technology Development (CTD) contract(s). Complete System Requirements Review. Initiate system design efforts for AAG to include modeling and simulation and trade studies. Complete Preliminary Design and Integrated Baseline Reviews. Select SDD phase contractor. Receive MS B approval and award SDD contract. Initiate Critical Design Review. Provide engineering and management support to the program.

CREI	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.075	0.184		
RDT&E Articles Quantity				

**CREI**  
 Conducted PDR for Commercial Arresting Gear hydraulic fluid in support of Cost Reduction & Effectiveness Improvement Initiative (CREI). Conduct dead-load testing on selected alternative hydraulic fluids. Initiate developmental testing of commercial Arresting Gear recyclable hydraulic fluid.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		16.230	24.619	18.953	18.719
Current BES/President's Budget		14.974	24.075	18.352	25.255
Total Adjustments		-1.256	-0.544	-0.601	6.536
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.145		
Congressional rescissions		-0.035			
SBIR/STTR Transfer		-0.326			
Economic Assumptions		-0.042	-0.399	-0.464	-0.568
Programmatic Adjustments		-0.853		-0.137	7.104
Congressional increases					
Subtotal		-1.256	-0.544	-0.601	6.536
(U) Schedule:					
MWS program slipped due to delays in receiving program documentation and directed changes to the acquisition strategy. MWS finalized program specifications and engaged industry for presolicitation comments. These changes have caused the following modifications to the MWS effort: MWS PDR scheduled for 3Q/02 has been moved to 4Q/02. MWS CDR has slipped from 4Q/02 to 1Q/03.					
All ALRCS milestones have been incorporated into the AAG program. The AAG program was delayed and the acquisition strategy modified in accordance with the direction of the Milestone Decision Authority to reduce technical and schedule risk. Changes to the AAG program schedule include the addition of a CTD phase prior to SDD. MS A and CTD contract award are scheduled for 3Q/03, MS B is delayed from 2Q/02 to 4Q/04 and MS C is delayed from 2Q/08 to 4Q/09. AAG SRR has moved from 2Q/02 to 1Q/04, PDR has moved from 4Q/03 to 3Q/04 and CDR has slipped from 4Q/04 to 3Q-4Q/05.					
(U) Technical:					
In accordance with the direction of the MDA, the AAG program has added a modeling and simulation intensive CTD phase prior to SDD as a result of AoA and Technology Maturity Assessment to reduce risk.					

R-1 SHOPPING LIST - Item No. 115

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems				PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems			
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN (Aircraft Launch & Recovery Equipment, 43SJ) Related RDT&E: P.E. 0603512N (Carrier Systems Development)	27.049	18.949	20.277	21.319	31.883	33.077	33.714	34.323	Continuing	
<b>(U) E. ACQUISITION STRATEGY:</b>										
MWS: The Navy has prepared a performance specification and competitively awarded an IDIQ contract to cover SDD (CPIF) and production requirements (FFP).										
VISUAL: 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										
ALRCS: ALRCS has become part of Advanced Arresting Gear program and strategy. Advanced Launch control System deferred pending redefinition of launch process under Electromagnetic Aircraft Launcher Systems program.										
AAG: The Navy will competitively award up to two Cost Plus Award Fee (CPAF) CTD phase contracts to develop the AAG. Upon completion of the Preliminary Design and Integrated Baseline Reviews, the Navy will award a single Cost Plus Incentive Fee (CPIF) contract for the SDD phase to develop and demonstrate a production representative AAG at the NAVAIR Lakehurst Jet Car and Runway Aircraft Landing test sites. After successful demonstration of the production representative AAG, the Navy will award Fixed Price Incentive Fee (FPIF) contracts for production quantities.										
CREI: 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.										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604512N Shipboard Aviation Systems			W2232 CV Launch & Recovery Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary H/W Development (AAG)	C/CPAF	TBD		8.968	06/03	10.971	11/03				19.939	19.939
Primary H/W Development (AAG)	C/CPIF	TBD						19.923	11/04		19.923	19.923
Primary H/W Development (AAG)	WX	NAWCAD, Lakehurst		1.199	11/02	1.223	11/03	1.247	11/04		3.669	
Primary H/W Development (VISUAL)	C/CPIF	DRS / Anaheim, CA	21.586	5.750	11/02	0.794	11/03				28.130	28.130
Primary H/W Development (VISUAL)	WX	NAWCAD, Lakehurst		0.050	11/02						0.050	
Primary H/W Development (MWS)	CPIF/FP	QPI / Fredricksburg, VA	1.541	1.320	11/02						2.861	2.861
Primary H/W Development (MWS)	WX	NAWCAD, Lakehurst		0.135	11/02					Continuing	Continuing	
Systems Engineering (MWS/CREI/VISUAL/AAG/ALRCS)	WX	NAWCAD, Lakehurst	45.625	5.486	11/02	4.593	11/03	3.775	11/03		59.479	
Systems Engineering (VISUAL/MWS)	WX	NAWCAD, Patuxent River	0.307								0.307	
Systems Engineering (VISUAL)	WX	NSWC, Crane IN	1.800								1.800	
Subtotal Product Development			70.859	22.908		17.581		24.945		Continuing	Continuing	
<p>Remarks: A portion of the FY03 AAG funding will be carried over to FY04, given the late FY03 CTD contract award. The AAG budget profile may be revised, once the contract(s) are finalized.</p>												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support												
<p>Remarks:</p>												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604512N Shipboard Aviation Systems			W2232 CV Launch & Recovery Systems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD Lakehurst, NJ		0.828	11/02	0.350	11/03				1.178	
Operational Test & Evaluation	WX	NAWCAD Lakehurst, NJ				0.100	11/03				0.100	
GFE												
Award Fees												
Subtotal T&E				0.828		0.450					1.278	
Remarks:												
Program Management Support	RX	NAWCAD Patuxent Rv, MD		0.214	03/03	0.216	05/04	0.220	05/05	Continuing	Continuing	
Travel	WX	NAWCAD Patuxent Rv, MD		0.045	11/02	0.045	10/03	0.045	10/04	Continuing	Continuing	
Travel	WX	NAWCAD Lakehurst, NJ		0.080	11/02	0.060		0.045	10/04		0.185	
Subtotal Management				0.339		0.321		0.310		Continuing	Continuing	
Remarks:												
Total Cost			70.859	24.075		18.352		25.255		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>													
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems								PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems																	
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009								
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
<b>VISUAL Acquisition Milestones</b>												MS C/FRP △					MS C/FRP △				CV ★																
Prototype Phase	System Development & Demonstration																First Deployment	IOC					First Deployment	IOC													
System Development				CV FCA △					CV PRR △			△	LH FCA △			△	LH PRR △				CV PCA △					LH PCA △											
EDM Delivery				Lab Shipboard △ 1					Lab Shipboard △ 1			△	△																								
Software (delivered with system)				CV △								LH △																									
<b>VISUAL Test &amp; Evaluation Milestones</b>				TRR △								TRR △																									
Development Test																																					
Operational Test																																					
<b>VISUAL Production Milestones</b>																																					
FY04 Option												△ 1																									
FY05 Option																△ 1																					
FY06 Option																																					
FY07 Option																																					
FY08 Option																																					
FY09 Option																																					
Deliveries																																					

R-1 SHOPPING LIST - Item No. 115

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

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604512N Shipboard Aviation Systems				W2232 CV Launch & Recovery Systems			
Schedule Profile - VISUAL	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
CV Quality Design and Build	1Q-4Q							
CV Test Readiness Review (TRR)	4Q							
CV Eng Dev Model (EDM) CV1 Delivery - Lab		1Q						
CV Developmental Testing (DT-IIA)		1Q-3Q						
CV Functional Configuration Audit (FCA)		1Q						
CV Eng Dev Model (EDM) CV2 Delivery - Shipboard		1Q						
CV Developmental Testing (DT-IIB)(TECHEVAL)		2Q-4Q						
CV Operational Testing (OT-IIA)		2Q						
CV Operational Evaluation (OT-IIB) (OPEVAL)			1Q					
CV Preproduction Readiness Review (PRR)			2Q					
CV Milestone C (MS C)			3Q					
CV Full Rate Production (FRP) Decision			3Q					
CV IOC					1Q			
CV First Deployment					1Q			
CV Physical Configuration Audit (PCA)				4Q				
LH Contract Award		2Q						
LH Combined PDR/CDR		3Q						
LH Quality Design and Build		3Q-4Q	1Q					
LH Test Readiness Review (TRR)			3Q					
LH Eng Dev Model (EDM) LH1 Delivery - Lab			3Q					
LH Developmental Testing (DT-IIA)			3Q-4Q					
LH Functional Configuration Audit (FCA)			3Q					
LH Eng Dev Model (EDM) LH2 Delivery - Shipboard			3Q					
LH Developmental Testing (DT-IIB) (TECHEVAL)			3Q-4Q					
LH Operational Testing (OT-IIA)			3Q					
LH Operational Evaluation (OT-IIB) (OPEVAL)				1Q				
LH Preproduction Readiness Review (PRR)				2Q				
LH Milestone C (MS C)				3Q				
LH Full Rate Production (FRP) Decision				3Q				
LH IOC						2Q		
LH First Deployment						2Q		
LH Physical Configuration Audit (PCA)						1Q		

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems								PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems																				
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>AAG Acquisition Milestones</b>							MS A				MS B																									MSC
Acquisition Phase							CTD Phase				System Development & Demonstration																									
Program Events					RFP		SRR		PDR				CDR	CDR			Equipment Delivery																			
<b>AAG Test &amp; Evaluation Milestones</b>							Contract Award (2)				Option Award (1)																									

R-1 SHOPPING LIST - Item No. 115

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





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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9071 Aviation Shipboard Information Technology			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>1.710</b>	<b>1.956</b>						
RDT&E Articles Qty								

**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 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) 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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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W9071 Aviation Shipboard Information Technology

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.710	1.956		
RDT&E Articles Quantity				

**Shipboard Aviation Information Technology**

Defined and documented overall system requirements and system architecture for future development, test, production and shipboard installation. Develop prototype software architecture and prototype flight deck management applications.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W9071 Aviation Shipboard Information Technology			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		1.735	0.000		
Current BES/President's Budget		1.710	1.956		
Total Adjustments		-0.025	1.956	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.012		
Congressional rescissions		-0.004			
SBIR/STTR Transfer		-0.020			
Economic Assumptions		-0.005	-0.032		
Reprogrammings		0.004			
Congressional increases			2.000		
Subtotal		-0.025	1.956	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 115

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																								
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604512N Shipboard Aviation Systems			<b>PROJECT NUMBER AND NAME</b> W9071 Aviation Shipboard Information Technology																									
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">Not Applicable</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;"><b>(U) E. ACQUISITION STRATEGY:</b></p> <p>NAWCAD Lakehurst activity defined requirements and system architecture with engineering support from industry as required. FY03 strategy to develop prototype software architecture and prototype flight deck management applications. Follow on strategy to develop, test, and produce system will be determined upon identification of follow on funding.</p>										<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	Not Applicable										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																					
Not Applicable																															

R-1 SHOPPING LIST - Item No. 115

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604512N Shipboard Aviation Systems			W9071 Aviation Shipboard Information Technology						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WX	NAWCAD Lakehurst, NJ	1.710	1.956	01/03						3.666	
Subtotal Product Development			1.710	1.956		0.000		0.000		0.000	3.666	
Remarks:												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604512N Shipboard Aviation Systems			W9071 Aviation Shipboard Information Technology						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
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												
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			1.710	1.956		0.000		0.000		0.000	3.666	
Remarks:												

R-1 SHOPPING LIST - Item No. 115

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 18 of 18)

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-05</b>	R-1 ITEM NOMENCLATURE 0604518N Combat Information Center Conversion
--	--

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	5.070	0.000	21.244	16.489	15.328	13.061	12.943	0.000
Q3094 / Common Undersea Picture	0.000	0.000	18.045	16.300	15.139	12.970	12.943	0.000
K1604 / NTDS Software Improvement	5.070	0.000	3.199	0.189	0.189	0.091	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The objective of this Program Element (PE), Project Q3094, is to integrate several current USW developmental technologies covered under Global Command and Control System - Maritime (GCCS-M) Operational Requirements Document (ORD) 510-06-99 (signed 02/99) to produce an integrated Common Undersea Picture (CUP) for use by Carrier Battle Group (CVBG) air, surface, submarine, and surveillance USW and MIW assets. A CUP Peer Review Group will select technologies to be incorporated into a build-test-build process to develop a net-centric USW Capability. Significant improvements will be made to USW multi-platform mission planning and evaluation, vulnerability assessment, situational awareness, collaborative communications, prosecution and execution, training, Operator Machine Interface (OMI), and operational reconstruction and analysis. CUP will align with and build upon common architectures including GCCS-M and Horizontal Integration (HI), incorporating "Best of Best" applications into a common Sea Combat Commander/Carrier Task Force Toolset. Successive Engineering Development Model (EDM) builds will be delivered to the GCCS-M Program of Record for production and fleet fielding.

This PE, under Project K1604 in FY 2002, also supports Common Command and Decision (CC&D) capability, a pre-planned product improvement (P<sup>3</sup>I) to the AEGIS Weapon System (AWS) 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 inoperability problems and achieve improvements in the air picture.

This program was transferred to Program Element (PE) 0604307N, AEGIS Combat System Engineering, Project K1447, in FY 2003.

This PE, under Project K1604 in FY 2004 - 2007, will fund the Advanced Combat Direction System (ACDS) Block 0 and Shipboard Gridlock System/Auto Correlation (SGS/AC) Baseline 5.1 computer program upgrade to resolve the assigned Joint Combat Identification Evaluation Team (JCIET) Single Integrated Air Picture (SIAP) warfighting shortfalls. The purpose is to provide a common correlation/decorrelation scheme among all services giving the warfare commanders a Single Integrated Air Picture (SIAP). The correlation Interoperability Change Proposal (ICP) driven changes would apply to the ACDS Block 0 program with functionality changes being implemented in SGS/AC as well, in order to implement a M9 message (Link 11). This ICP will eliminate cluttered tactical picture and improve operator workload and optimize the allocation of weapons and threats.

**Defense Emergency Response Funds (DERF) Funds:**

Not Applicable

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion			PROJECT NUMBER AND NAME Q3094 / Common Undersea Picture			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>18.045</b>	<b>16.300</b>	<b>15.139</b>	<b>12.970</b>	<b>12.943</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This Program Element (PE), Project Q3094, will leverage technologies from several current USW development efforts and developers tool sets through a peer reviewed technology selection and evolutionary development build/test/build process to develop a Common Undersea Picture (CUP) capability for Carrier Battle Group USW Surface, Submarine, Air, and support assets. Significant improvements will be made to USW multi-platform mission planning and evaluation, vulnerability assessment, situational awareness, collaborative communications, prosecution and execution, training, OMI, and operational reconstruction and analysis. CUP will align and build upon common architectures including GCCS-M and HI, incorporating the "Best of Best" applications into a common Sea Combat Commander/CTF Toolset planned for installation on two CVBGs per year beginning in FY04.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion	PROJECT NUMBER AND NAME Q3094 / Common Undersea Picture

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
CUP GCCS-M, DII-COE Integration			1.230	1.356
RDT&E Articles Quantity				

Defense Information Infrastructure-Common Operating Environment (DII-COE), Global Command and Control System - Maritime (GCCS-M) Licenses and integration, Command and Control (C2), network and security

	FY 02	FY 03	FY 04	FY 05
CUP Requirements Analysis			1.652	1.778
RDT&E Articles Quantity				

Requirements analysis and design; mission planning and evaluation, vulnerability assessment, situational awareness, collaborative communications, prosecution and execution, training, Operator Machine Interface (OMI) and operational reconstruction and analysis

	FY 02	FY 03	FY 04	FY 05
CUP TDA Support			1.822	2.391
RDT&E Articles Quantity				

Technical Design Agent (TDA) support; Peer Review Group technology developments and successive EDM Build software development and modification

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion	PROJECT NUMBER AND NAME Q3094 / Common Undersea Picture

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
CUP Carrier Integration			1.036	1.186
RDT&E Articles Quantity				

Carrier Tactical Support Center (TSC) Integration; Tactical Decision Aids (TDAs), management and communication of contact/track data

	FY 02	FY 03	FY 04	FY 05
CUP EDM Platform Integration/Application Development			12.305	9.589
RDT&E Articles Quantity				1

Begin Build 1 EDM development and integration; incorporate Peer Review Group technology developments into the build-test-build process, integrate air, surface, submarine and surveillance and MIW assets, and develop evolutionary embedded training and ILS support documentation. Complete EDM Build 1, coordinate and conduct At-Sea test and deliver to GCCS-M for production build in FY 2005.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion	PROJECT NUMBER AND NAME Q3094 / Common Undersea Picture			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
		FY 2002	FY 2003	FY 2004	FY2005
Previous President's Budget: (FY03 Pres Controls) :		0.000	0.000	0.000	0.000
Current BES/President's Budget (FY04 President Controls)		0.000	0.000	18.045	16.300
Total Adjustments		0.000	0.000	18.045	16.300
Summary of Adjustments					
Miscellaneous Adjustments				-0.555	-0.500
Reprogrammings				18.600	16.800
Subtotal		0.000	0.000	18.045	16.300
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 116

# UNCLASSIFIED

Exhibit R-2a, RDTEEN Project Justification  
(Exhibit R-2a, page 5 of 19)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>			PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion				PROJECT NUMBER AND NAME Q3094 / Common Undersea Picture			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u> Not Applicable	<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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
<b>E. ACQUISITION STRATEGY:</b>										
<ul style="list-style-type: none"> <li>- Prime contractor award planned 2Q FY 2004.</li> <li>- Successive EDM builds to be developed, tested and delivered to GCCS-M program of record for production and fleet fielding.</li> </ul>										
<b>F. MAJOR PERFORMERS:</b>										
<ul style="list-style-type: none"> <li>- Johns Hopkins University Applied Physics Laboratory (JHU/APL), MD - CUP Technical Design Agent and Test &amp; Evaluation support</li> <li>- Naval Undersea Warfare Center, Newport, RI - CUP Technical Design Agent support</li> <li>- Naval Surface Warfare Center, Dahlgren, VA - CUP requirements analysis, surface ship integration and mission planning support</li> <li>- Naval Undersea Warfare Center Keyport, WA - CUP Carrier integration and track management</li> <li>- SPAWAR Systems Center, San Diego, CA - Defense Information Infrastructure-Common Operating Environment (DII-COE), GCCS-M, Command and Control (C2) collaboration tools, network and security certifications</li> </ul>										

R-1 SHOPPING LIST - Item No. 110

# UNCLASSIFIED



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604518N Combat Information Center Conversion			Q3094 / Common Undersea Picture						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
At-Sea Test & Evaluation	Var.	Var.	0.000					0.300	11/04	Continuing	Continuing	
Subtotal T&E			0.000	0.000		0.000		0.300		Continuing	Continuing	
Remarks:												
Program Management Support	Var.	Var.	0.000			0.410	11/03	0.420	11/04	Continuing	Continuing	
Subtotal Management			0.000	0.000		0.410		0.420		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		18.045		16.300		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 116

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-05</b>								0604518N Combat Information Center Conversion								Q3094 / Common Undersea Picture																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition/Contract Milestones/Reviews</b>									Contract Award △																							
Common Undersea Picture System Development Builds 1/2/3									Build 1 △								Build 2 △								Build 3 △							
Common Undersea Picture Software Delivery to GCCS-M for Production Build																	Build 1 △								Build 2 △							
<b>Test &amp; Evaluation Milestones</b>																																
Common Undersea Picture At-Sea Tests													Build 1 □								Build 2 □											
<b>Production Milestones</b>																																
Deliveries																																





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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion			PROJECT NUMBER AND NAME K1604 / NTDS Software Improvement/Common C&D			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>5.070</b>	<b>0.000</b>	<b>3.199</b>	<b>0.189</b>	<b>0.189</b>	<b>0.091</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

FY 2002: Common Command and Decision (CC&D) capability is a pre-planned product improvement (P<sup>3</sup>I) to the AEGIS Weapon System (AWS) and the Ship Self Defense System (SSDS) MK 2 that replaces the C&D 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 and enabling 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.

This program was transferred to Program Element (PE) 0604307N, AEGIS Combat System Engineering, Project K1447, in FY 2003.

FY 2004-2007: This PE, under Project K1604, will fund the Advanced Combat Direction System (ACDS) Block 0 and Shipboard Gridlock System/Auto Correlation (SGS/AC) Baseline 5.1 computer program upgrade to resolve the assigned Joint Combat Identification Evaluation Team (JCIET) Single Integrated Air Picture (SIAP) warfighting shortfalls. The purpose is to provide a common correlation/decorrelation scheme among all services giving the warfare commanders a Single Integrated Air Picture (SIAP). The correlation Interoperability Change Proposal (ICP) driven changes would apply to the ACDS Block 0 program with functionality changes being implemented in SGS/AC as well, in order to implement a M9 message (Link 11). This ICP will eliminate cluttered tactical picture and improve operator workload and optimize the allocation of weapons and threats.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604518N Combat Information Center Conversion	PROJECT NUMBER AND NAME K1604 / NTDS Software Improvement/Common C&D
--	--	---

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
CC&D Engineering & Acquisition Technical Mgmt.	5.070			
RDT&E Articles Quantity				

Continue design engineering, technical management, and acquisition management of the Common Command and Decision (CC&D) capability/methodology.

	FY 02	FY 03	FY 04	FY 05
Computer Program Development & Sys. Integration			3.199	0.189
RDT&E Articles Quantity				

Complete computer program development upgrades to SGS/AC Baseline 5.1 and ACDS Block 0 for the Amphibious class ships. Complete systems integration efforts and test between ACDS Block 0 and SGS/AC baseline 5.1 and begin software deliveries.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>BA-05</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604518N Combat Information Center Conversion	<b>PROJECT NUMBER AND NAME</b> K1604 / NTDS Software Improvement/Common C&D			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		5.344	0.000	0.000	0.000
Current BES/President's Budget: (FY04/05 Pres Controls)		5.070	0.000	3.199	0.189
Total Adjustments		-0.274	0.000	3.199	0.189
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer		-0.117			
Economic Assumptions/Miscellaneous Adjustments		-0.052		-0.201	-0.011
Reprogrammings		-0.105		3.400	0.200
Congressional increases					
Subtotal		-0.274	0.000	3.199	0.189
Schedule:					
Technical:					

R-1 SHOPPING LIST - Item No. 116

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-05			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604518N Combat Information Center Conversion				<b>PROJECT NUMBER AND NAME</b> K1604 / NTDS Software Improvement/Common C&D			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
0604307N / AEGIS Open Architecture	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2
<b>E. ACQUISITION STRATEGY:</b>										
The acquisition management of this particular effort is for the Software Support Activities (SSA) for ACDS Block O and SGS/AC and fund the facilities to implement the required computer program changes, complete the integration effort, test and deliver.										
<b>F. MAJOR PERFORMERS:</b>										
Naval Surface Warfare Center (NSWC) Dahlgren Division located in Dahlgren, Virginia is the Software Support Agent (SSA) for the SGS/AC baseline 5.1 program. Funds will be placed on a work request in 10/03.										
Naval Surface Warfare Center (NSWC) Dam Neck Division located in Virginia Beach, Virginia is the Software Support Agent (SSA) for the ACDS Block O program. Funds will be placed on a work request in 10/03.										

R-1 SHOPPING LIST - Item No. 116

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604518N Combat Information Center Conversion			K1604/NTDS Software Improvement/Common C&D						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test Facility/Simulation Upgrade /Lic	VAR	Various	14.496							0.000	14.496	
Subtotal Support			14.496	0.000		0.000		0.000		0.000	14.496	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604518N Combat Information Center Conversion			K1604/NTDS Software Improvement/Common C&D						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT/OT Test, Test Spt., IV&V Efforts	VAR	Various	21.786							0.000	21.786	
Subtotal T&E			21.786	0.000		0.000		0.000		0.000	21.786	
Remarks:												
Resource Management Support	VAR	Various	1.025							0.000	1.025	
Contractor Engineering Support	VAR	Various	0.250							0.000	0.250	
Program Management Support	VAR	Various	1.867							0.000	1.867	
Travel	VAR	Various	0.179							0.000	0.179	
Subtotal Management			3.321	0.000		0.000		0.000		0.000	3.321	
Remarks:												
Total Cost			242.022	0.000		3.199		0.189		0.280	245.690	
Remarks:												

R-1 SHOPPING LIST - Item No. 116

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**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 17 of 19)

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																									DATE:							
APPROPRIATION/BUDGET ACTIVITY																									PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA-05																									0604518N Combat Information Center Conversion				K1604/NTDS Software Improvement/Common C&D			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Prototype Phase																																
ACDS Block 0 System Upgrade Effort																																
SGS/AC System Upgrade Effort																																
Software																																
<b>Test &amp; Evaluation Milestones</b>																																
Combat System Integration Test (CSIT)																																
<b>Production Milestones</b>																																
Not Applicable																																
Deliveries																																

LHD and LHA class ships

CSIT





EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604558N/VIRGINIA Class Design Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	192.053	240.731	112.355	118.303	120.706	111.775	94.713	84.259
F1947/VIRGINIA Class HM&E Development	111.599	125.915	75.842	87.118	92.703	80.172	70.299	58.801
F1950/VIRGINIA Class Combat Systems Dev	75.718	90.852	30.445	27.362	25.236	28.761	21.509	22.469
F2887/SSN Combat Sys Tech Insert/Refresh	4.736	4.890	0.000	0.000	0.000	0.000	0.000	0.000
F3062/Submarine Multi Mission Team Trainer	0.000	16.239	6.068	3.823	2.767	2.842	2.905	2.989
F9231/Shipmates for VIRGINIA Class	0.000	1.662	0.000	0.000	0.000	0.000	0.000	0.000
F9232/COTS Combat Control Framework	0.000	1.173	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles								

**Defense Emergency Response Funds (DERF): NOT APPLICABLE**

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.

(U) Project F2887: The Congressional plus-up is for MPP SBIR follow-on for Technology Insertion and refresh for VIRGINIA SSN Combat System.

(U) Project F9231: The Congressional plus-up is for Shipmates for the VIRGINIA Class. Develop a Non-Tactical Data Application Processing System application for the shipboard LAN.

(U) Project F9232: The Congressional plus-up is for COTS Combat Control Framework to develop a software architecture that supports migration of the Global Command and Control System-Maritime (GCCS-M) segments into the planned IT-21 server.

(U) Project F3062: The Submarine Multi-Mission Team Trainer (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 into COTS software 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development			PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>111.599</b>	<b>125.915</b>	<b>75.842</b>	<b>87.118</b>	<b>92.703</b>	<b>80.172</b>	<b>70.299</b>	<b>58.801</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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.

R-1 SHOPPING LIST - Item No. 117

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 2 of 28)

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	80.168	87.671	21.845	20.412
RDT&E Articles Quantity				

**HM&E DEVELOPMENT**

FY02 Accomplishments: Continued the design concepts for reducing propulsor change out time. Continued 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. 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 included: (1) continued development of Accelerated Electro-Magnetic (EM) Silencing, Conformal Acoustic Velocity Sensor (CAVES) Array technology, the Advanced Sail, Advanced Processor Build (Acoustic) (APB (A)) 01, Advanced Processor Build (Tactical) (APB(T)) 01; (2) initiated development of APB(A) 02 update, APB(T) 02, Information Assurance, Onboard Team Trainer (OBTT) Enhancements (Phases I and II); and (3) completed development of APB (A) 99 update, draft specs for VIRGINIA Class submarine implementation of CAVES large array and wireless infrastructure architecture concept.

FY03 Plan: 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. Initiate shock qualification of weapons handling module and other major components and complete shock qualification of air flasks. 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. Complete the design of concept to reduce propulsor change out time and improve acoustic performance. Complete Ship Control Station. Complete limited evaluation of common VIRGINIA/SEAWOLF Acoustic Lessons Learned. Technology Insertions include (1) initiating the development of Non-Tactical Data Processing Improvements (NTDPS) (SUBLAN), APB (A) 03, (2) continuing APB (T) 01-02, and (3) completion of APB (A) 01-02.

FY04 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; electromagnetic signature reduction; and ship control system. Continue shock qualification of weapons handling module and other major components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Complete development of Diesel Generator. 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.

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT
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**B. Accomplishments/Planned Program (continued)**

HM&E DEVELOPMENT (continued)  
 FY05 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: weapons stowage and handling systems and ship control system. Complete the shock qualification of weapons handling module and other major 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	14.362	10.196	9.009	8.632
RDT&E Articles Quantity				

ADMINISTRATIVE/ENVIRONMENTAL  
 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 processes. 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.198	6.451	1.519	0.715
RDT&E Articles Quantity				

LOGISTIC SUPPORT  
 FY02 Continued VIRGINIA Class trainers/training development to support VIRGINIA Class. Through FY03, these efforts include the On-board Team Trainer Master Controller (OBTT MC), VIRGINIA Ship Control Operator Trainer (VSCOT), VIRGINIA Ship Control Maintenance Trainer (VSCMT), Weapons Launch Console (WLC) Trainer upgrade and the Emergency Diesel Generator Trainer. The FY04 effort will also include the Common Operational Analysis and Employment Equipment Trainer (COAEET). FY05 will continue development efforts in progress.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	12.871	21.597	43.469	57.359
RDT&E Articles Quantity				

**TEST AND EVALUATION**

FY02 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 test OT-IIB at the COATS facility. Prepared test plans, schedules and support associated with developmental testing, conducted 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 and Evaluation (LFT&E) modeling and analysis. Continued development of the total ship test plan in support of Developmental Testing (DT) and Operational Test (OT).

FY03 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.

FY04 Conduct shipbuilder at-sea trials, and dockside testing. Plan and coordinate second shipbuilder Test and Evaluation efforts. Prepare test plans, schedules and support associated with developmental testing, conduct Operational Testing - Phase IIC, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Continue development of the total ship test plan in support of DT/OT-IIA-IIF.

FY05 Conduct Full Ship Shock Test on SSN775. Conduct Acoustic Trials as well as EM Silencing Trials and Launcher Trials. Continue planning for TECHEVAL and OPEVAL.

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b>	<b>PROJECT NUMBER AND NAME</b>			
<b>RDT&amp;E, N / BA-5</b>	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		120.103	128.741	125.730	132.895
Current BES/President's Budget: (FY04/05 PRES Controls)		111.599	125.915	75.842	87.118
Total Adjustments		-8.504	-2.826	-49.888	-45.777
Summary of Adjustments					
Reprogramming		-0.256	-0.009		
Miscellaneous adjustments				-48.101	-43.871
SBIR/STTR TRANSFER		-1.945			
NWCF RATES ADJUSTMENTS				-0.037	-0.028
Business Process Reform			-0.515		
Economic Assumptions		-0.324	-0.722		
IT Cost Growth			-0.237		
FY02 BTR		-1.26			
FY02 Actuals		-4.719			
Inflation Adjustment			-1.343	-1.750	-1.878
Subtotal		-8.504	-2.826	-49.888	-45.777
Schedule:					
"Not Applicable"					
Technical:					
"Not Applicable."					

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT
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**D. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
SCN Line 201300 PE: 0203281N	2479.22	2427.434	2528.107	2874.671	2883.068	4089.941	4126.144	5338.55	39908.1	75140.9
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M/N BA-2 1B2B PE: 0204283N	0	0	19.293	29.156	29.14	49.161	69	69	cont.	cont.
OPN BA-8 Line Item 094200	0	0	0	51.53	217.722	268.511	223.163	235.964	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)

**E. 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-on ships. In September 1997, Congress passed a law allowing Electric Boat (EB) and Northrop Grumman Newport News (NGNN) to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, EB remained the design yard for the VIRGINIA Class Submarine and NGNN became a part of the IPPD process. The Program Office is expected to continue the EB/NGNN teaming arrangement and is considering a block buy for FY03 and is also considering other alternate strategies. Future focus will be to complete ship design, continuance of Logistics product development, Technology Insertion and testing for the VIRGINIA Class submarines.

**F. MAJOR PERFORMERS: \*\***

1. Electric Boat Corporation, Groton CT - Virginia Class Lead Shipbuilder - Contract Award Date 28 Sept. 2000.
2. Naval Surface Warfare Center, Carderock Division, Bethesda, MD - Research, Development, Test & Evaluation Laboratory
3. Naval Undersea Warfare Center, Newport, RI - Research, Development, Test & Evaluation Laboratory

R-1 SHOPPING LIST - Item No.117

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604558N/VIRGINIA Class Design Development			F1947/VIRGINIA Class HM&E DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Component Development	Contract	EB-2112 Groton, CT	445.686	35.580	11/02	10.049	11/03	4.898	11/04	1.814	498.027	
Component Development	SS/CPFF	EB-4030 Groton, CT	234.056	1.400	11/02	2.400	11/03	1.600	11/04	1.600	241.056	
Component Development	SS/CPFF	LM-6226	10.202	7.800	11/02	0.000	11/03	0.000	11/04	0.000	18.002	
Component Development	WR	NSWC Carderock MD	396.015	40.305	11/02	9.732	11/03	9.648	11/04	40.940	496.640	
Component Development	WR	NSWC Crane, IA	4.029	0.000	11/02	0.000	11/03	0.000	11/04	0.000	4.029	
Component Development	WR	NUWC Newport, RI	74.710	3.742	11/02	2.311	11/03	0.818	11/04	0.530	82.111	
Component Development	WR	NFPC Phila, PA	3.523	2.000	11/02	0.000	11/03	0.000	11/04	0.000	5.523	
Component Development	WR	NAWC Orlando, FL	22.212	2.591	11/02	0.000	11/03	0.000	11/04	0.000	24.803	
Component Development	Various	Misc	199.706	4.170	Various	5.069	Various	9.897	Various	49.124	267.966	
Technology Insertion	Various	Misc	18.192	2.179	Various	0.000	Various	0.000	Various	385.560	398.288	
											0.000	
<b>Subtotal Product Development</b>			<b>1,408.331</b>	<b>99.767</b>		<b>29.561</b>		<b>26.861</b>		<b>479.568</b>	<b>2,044.088</b>	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Trainers											0.000	
Integrated Logistics Support											0.000	
configuration management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
<b>Subtotal Support</b>											<b>0.000</b>	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604558N/VIRGINIA Class Design Development			F1947/VIRGINIA Class HM&E DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	Contract	EB-2112 Groton, CT	2.059	1.432	11/02	4.008	11/03	11.670	11/04	31.301	50.470	
Test & Evaluation	WR	NSWC Carderock MD	14.099	10.085	11/02	20.488	11/03	16.281	11/04	45.889	106.842	
Test & Evaluation	WR	NUWC Newport, RI	11.138	2.887	11/02	6.170	11/03	6.516	11/04	36.267	62.978	
Test & Evaluation	C/CPAF	EG&G C6411 Rockville, MD	6.461	2.234	11/02	2.555	11/03	2.795	11/04	14.835	28.880	
Test & Evaluation	Various	Miscellaneous	10.056	4.959	11/02	10.248	11/03	20.097	11/04	79.844	125.204	
Test & Evaluation											0.000	
Test & Evaluation											0.000	
Subtotal T&E			43.813	21.597		43.469		57.359		208.136	374.374	
Remarks:												
Contractor Engineering Support	C/CPAF	SEAPORT D7019 Rockville MD	5.261	4.551	11/02	2.812	11/03	2.898	11/04	34.210	49.732	
Program Management Support	C/CPAF	EG&G C6411 Rockville, MD	21.537								21.537	
Program Management Support	Various	Miscellaneous	19.232								19.232	
Travel											0.000	
Award Fees		EG&G C6411 Rockville, MD	1.032								1.032	
SBIR Assessment											0.000	
Subtotal Management			47.062	4.551		2.812		2.898		34.210	91.533	
Remarks:												
Total Cost			1,499.206	125.915		75.842		87.118		721.914	2,509.995	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

**UNCLASSIFIED**

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 9 of 28)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development								PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				▲ Program Review																△ IOC								△ MS III				
<b>Test &amp; Evaluation Milestones</b>																																
Development Test					DT-IIB				DT-IIC								TSST				DT-IIE				DT-IIF							
Operational Test					OT-IIB				OT-IIC												DT-IID SHOCK TEST				OPEVAL OT-IID							
<b>Construction Milestones</b>																																
Ship Authorizations	▲ SSN 777				△ SSN 778				△ SSN 779				△ SSN 780				△ SSN 781				△ SSN 782				△ SSN 783				△ SSN 784			
Ship Deliveries											△ SSN 774				△ SSN 775						△ SSN 776						△ SSN 777					
Post Shakedown Availability																	PSA SSN 774				PSA SSN 775				PSA SSN 776				PSA SSN 777			

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development			PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>75.718</b>	<b>90.852</b>	<b>30.445</b>	<b>27.362</b>	<b>25.236</b>	<b>28.761</b>	<b>21.509</b>	<b>22.469</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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 include requirements definition, software, hardware development, software/hardware test, prototype production, and electronic integration as well as physical integration into the platform.

(U) The 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.

(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.

(U) This FY04/05 budget submit expands the original definition of the F1950 project mission to include an ongoing post VIRGINIA Class TECH/OPEVAL RDT&E effort to continue the development of VIRGINIA Unique Combat System Improvements. The VIRGINIA Class C3I will continue to leverage backfit communities efforts, but even with "common" systems that the Navy has developed there will continue to be VIRGINIA Unique capability improvements required. The FY08 and out funding identified is for those efforts.

R-1 SHOPPING LIST - Item No. 117

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 12 of 28)

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development

**B. Accomplishments/Planned Program --- C3I Systems Engineering**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	38.910	55.456	14.827	13.207
RDT&E Articles Quantity				

1. (U) FY 2002 ACCOMPLISHMENTS:  
• (U) (\$38.910M) Initial 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 in support of formal DT/OT; and completed C3I System Integration and Interface Operability Testing. Continued development of system changes identified during integration efforts. Continued development of technology refreshment changes to C3I System/subsystems.

2. (U) FY 2003 PLAN:  
• (U) (\$55.456M) Continue development of high priority ship safety/self-protect deficiencies identified during integration efforts. Complete development of high priority technology refreshment changes to C3I System/subsystems.

3. (U) FY 2004 PLAN:  
• (U) (\$14.827M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts.

4. (U) FY 2005 PLAN:  
• (U) (\$13.207M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Begin the detailed planning for C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL.

R-1 SHOPPING LIST - Item No. 117

**UNCLASSIFIED**

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development

**B. Accomplishments/Planned Program (Cont.) --- Sonar Combat Control and Architecture Subsystems**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	36.808	35.396	15.618	14.155
RDT&E Articles Quantity				

1. (U) FY 2002 ACCOMPLISHMENTS:

- (U) (\$36.808M) Completed detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Continued development of S/CC/A subsystem changes identified during integration efforts. Continued development of deliveries for technology refreshment changes to S/CC/A subsystems. Continued integration of Tactical Tomahawk capability into S/CC/A.

2. (U) FY 2003 PLAN:

- (U) (\$35.396M) Continue development of S/CC/A subsystem changes identified during integration efforts. Complete development of high priority technology refreshment changes to S/CC/A subsystems. Continue integration of Tactical Tomahawk capability into S/CC/A.

3. (U) FY 2004 PLAN:

- (U) (\$15.618M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Complete integration of Tactical Tomahawk capability into S/CC/A.

4. (U) FY 2005 PLAN:

- (U) (\$14.155M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Begin the detailed planning

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:	79.707	92.907	62.390	51.839
GY 2004 President's Budget	75.718	90.852	30.445	27.362
Total Adjustments	-3.989	-2.055	-31.945	-24.477
Summary of Adjustments				
Reprogramming	-0.170	-0.006		
Miscellaneous Adjustments			-27.784	-23.944
NETWORK ARCHITECTURE AND TIDS			-3.500	
SBIR/STTR TRANSFER	-1.619			
NWCF RATES ADJUSTMENT			0.041	0.057
Business Process Reform		-0.371		
Economic Assumptions	-0.216	-0.521		
IT Cost Growth		-0.171		
FY02 Actuals	-1.984			
Inflation Adjustment		-0.986	-0.702	-0.590
Subtotal	-3.989	-2.055	-31.945	-24.477

Schedule:  
"Not Applicable"

Technical:  
"Not Applicable"

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN Line 201300 PE: 0203281N	2479.22	2427.434	2528.107	2874.671	2883.068	4089.941	4126.144	5338.55	39908.1	75140.9
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M/N BA-2 1B2B PE: 0204283N	0	0	19.293	29.156	29.14	49.161	69	69	cont.	cont.
OPN BA-8 Line Item 094200	0	0	0	51.53	217.722	268.511	223.163	235.964	cont.	cont.

(U) Related RDT&E

(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)

**E. 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-on ships. In September 1997, Congress passed a law allowing Electric Boat (EB) and Northrop Grumman Newport News (NGNN) to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, EB remained the design yard for the VIRGINIA Class Submarine and NGNN became a part of the IPPD process. The Program Office is expected to continue the EB/NGNN teaming arrangement and is considering a block buy for FY03 and is also considering other alternate strategies. Future focus will be to complete ship design, continuance of Logistics product development, Technology Insertion and testing for the VIRGINIA Class submarines.

**F. MAJOR PERFORMERS: \*\***

Lockheed Martin, Manassas, Virginia. C3I Prime Contractor, Development and Limited Production of the S/CC/A Subsystems, Contract Award Date 24 April 1996.

Naval Undersea Warfare Center, Newport, Rhode, Island, Technical Direction Agent for all Virginia Class Electronics.

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)							DATE: February 2003					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604558N/VIRGINIA Class Design Development			F1950/VIRGINIA Class Combat System Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	233.173	12.646	Various	4.671	Various	0.735	Various	0.143	251.368	251.368
C3I Prime Contract E&MD Award Fee	C/CPAF	Lockheed Manassas, VA	6.899	0.532	Various	0.500	Various	0.500	Various	0.028	8.459	8.459
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA	16.500	3.135	Various	2.509	Various	2.509	Various	3.877	28.530	28.530
Unique Virginia Class Improvements	TBD	Various/TBD	0.000							96.206	96.206	96.206
Advanced Display Sys (AN/UYQ-70)	SS/CPFF		0.000								0.000	
	CPIF	Lockheed St. Paul, MN	24.191	1.900	11/02	1.600	11/03	1.500	11/04	9.688	38.879	38.879
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, M	24.656	4.000	11/02	1.956	11/03	1.590	11/04	11.562	43.764	43.764
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, M	4.060								4.060	4.060
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	37.858	0.209	11/02	0.213	11/03	0.217	11/04	6.902	45.399	45.399
Platform Integration	SS/CPFF	EB Corp Groton, CT	27.382	4.300	11/02	2.500	11/03	2.500	11/04	19.723	56.405	56.405
Platform Integration	SS/CPFF	NNews Shipbuilding NNews,	3.065								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	9.757	21.142	Various	0.810	Various	1.301	Various	1.805	34.815	
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500								2.500	2.500
Technical Direction Agent	N/A	NUWC Newport, RI	188.083	11.473	Various	6.105	Various	5.831	Various	48.900	260.392	
Technology Refreshment/Info. Assur	C/CPFF	Progeny Systems, Manassas	9.828	2.500	11/02	0.000	11/03	0.000	11/04	0.000	12.328	
Systems Engineering	N/A	NSWC Cardock, MD	3.995	0.330	11/02	0.335	11/03	0.340	11/04	0.600	5.600	
Systems Engineering	N/A	NSWC Crane, IN	3.439	0.400	11/02	0.415	11/03	0.430	11/04	0.800	5.484	
Systems Engineering	N/A	SSC Charleston, SC	2.333								2.333	
Systems Engineering	N/A	SSC San Diego, CA	1.635	0.105	11/02	0.110	11/03	0.115	11/04	0.200	2.165	
Systems Engineering	N/A	NUWC Keyport, WA	4.876	1.330	11/02	0.240	11/03	0.250	11/04	1.500	8.196	
Miscellaneous	Various	Various	41.478	23.756	Various	5.399	Various	3.960	Various	82.084	162.149	
Subtotal Product Development			709.985	87.758		27.363		21.778		284.018	1,136.374	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604558N/VIRGINIA Class Design Development				F1950/VIRGINIA Class Combat System Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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		0.300	Various	0.300	Various	2.805	Various	15.691	19.096	
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			0.000	0.300		0.300		2.805		15.691	19.096	
Remarks:												
Contractor Engineering Support			0.000									0.000
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	3.040	2.794	Various	2.782	Various	2.779	Various	26.378	37.773	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	14.406								14.406	
CSS/ETS Award Fee	C/CPFF	EG&G Rockville, MD	1.195								1.195	
Contractor Support Services/ETS	C/CPFF	EG&G Rockville, MD	8.857								8.857	
Contractor Support Services/ETS	C/CPFF	SWL Inc. Vienna, VA	5.705								5.705	
Contractor Support Services/ETS	C/CPFF	American Sys Chantilly, VA	2.099								2.099	
Miscellaneous	Various	Various	4.676								4.676	
Program Management Support			0.000									0.000
Travel			0.000									0.000
Subtotal Management			39.978	2.794		2.782		2.779		26.378	74.711	
Remarks:												
Total Cost			749.963	90.852		30.445		27.362		326.087	1,224.709	
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Dev										PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				▲ Program Review																△ IOC								△ MS III				
<b>Test &amp; Evaluation Milestones</b>																																
Development Test					DT-IIB				DT-IIC				TSST				DT-IIIE				DT-IIIF											
Operational Test					OT-IIB				OT-IIC				DT-IIID SHOCK TEST				OPEVAL OT-IIID															
<b>Construction Milestones</b>																																
Ship Authorizations	▲ SSN 777				△ SSN 778				△ SSN 779				△ SSN 780				△ SSN 781				△ SSN 782				△ SSN 783				△ SSN 784			
Ship Deliveries									△ SSN 774				△ SSN 775							△ SSN 776				△ SSN 777								
Post Shakedown Availability													PSA SSN 774				PSA SSN 775				PSA SSN 776				PSA SSN 777							

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development			PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission Team Trainer			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>16.239</b>	<b>6.068</b>	<b>3.823</b>	<b>2.767</b>	<b>2.842</b>	<b>2.905</b>	<b>2.989</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shorebased Combat System Team Trainers capable of training 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 Submarine Multi-Mission Team Trainer (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.

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission Team Trainer
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	16.239	6.068	3.823
RDT&E Articles Quantity				

FY03 Develop/integrate new software capabilities and system interfaces. Initiate development of display software.  
 FY04 Incorporate visualization/simulation (VIS/SIM) technology into appropriate displays. Develop Weapons Console emulations.  
 FY05 Combine components and tailor interfaces to create immersive environment. Incorporate latest Advanced Processor Build (APB).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission TeamTrainer			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:		0.000	16.605	6.458	4.071
FY 2004 President's Budget		0.000	16.239	6.068	3.823
Total Adjustments		0.000	-0.366	-0.390	-0.248
Summary of Adjustments					
Inflation Adjustment			-0.176	-0.140	-0.082
Reprogramming	0.000		-0.097		
Miscellaneous Adjustments				-0.250	-0.166
Economic Assumptions			-0.093		
Subtotal		0.000	-0.366	-0.390	-0.248
Schedule:					
"Not Applicable."					
Technical:					
"Not Applicable."					

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N /BA-5</b>			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604558N/VIRGINIA Class Design Development			<b>PROJECT NUMBER AND NAME</b> F3062/Submarine Multi-Mission Team Trainer				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
566100, Submarine Training Device Modification	19.1	18.4	24.5	38.9	32.2	21.2	19.8	20.1	0	194.2
<b>E. ACQUISITION STRATEGY: *</b>										
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.										
<b>F. MAJOR PERFORMERS: **</b>										
NSWCCD										

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N /BA-5</b>			0604558N/VIRGINIA Class Design Development			F3062/Submarine Multi-Mission Team Trainer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
Component Development	WR	NSWCCD, Bethesda, MD	0.000	16.239	various	6.068	various	3.823	various	11.503	37.633	N/A
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	16.239		6.068		3.823		11.503	37.633	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N /BA-5</b>			0604558N/VIRGINIA Class Design Development			F3062/Submarine Multi-Mission Team Trainer						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	16.239		6.068		3.823		11.503	37.633	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>									
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development												PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission Team Trainer									
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	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	
Simulation Plan Development					▲	—	—	△																									
Prime Item Development Specification (PIDS)					▲	△																											
System Requirements Specification (SRS)					▲	—	—	△																									
Interface Requirements Specification (IRS)					▲	—	—	△																									
Interface Design Development					▲	—	—	—	△																								
Software Development						△	—	—	—	—	—	△																					
Software Testing										△	—	—	—	—	—	△																	
EDM Delivery														△																			
APB Upgrades									△	—	—	—	△	—	—	△					△	—	—	—	△	—	—	—	△	—	—	—	

R-1 SHOPPING LIST - Item No. 117

# UNCLASSIFIED



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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	5.448	16.353	13.482	3.057	3.093	3.726	3.078	3.135
SSN-21 Developments/F1946	5.448	3.883	3.708	3.057	3.093	3.726	3.078	3.135
SEAFAC Range Upgrade/F9233	0.000	12.470	9.774	0.000	0.000	0.000	0.000	0.000
<p><b>Defense Emergency Response funds (DERF) Funds:</b> Not Applicable</p> <p><b>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p><b>F1946 SSN-21 Developments:</b> The SEAWOLF Submarine is a multi-mission ship that provides 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.</p> <p><b>F9233 SEAFAC Range Upgrade:</b> The SEAWOLF Class submarine is a multi-mission ship that provides numerous unprecedented submarine performance capabilities such as more capable combat systems, greater weapon capacity and capability, advanced reactor, improved acoustic sensors, increased operating depth, improved ship control, and enhanced survivability. Among these capabilities is an unprecedented acoustic stealth performance as a result of an order of magnitude improvement in ship quieting.</p> <p>Maintaining the acoustic stealth advantage and upholding the effectiveness and survivability of the SEAWOLF and future class submarines require that radiated acoustic signatures are periodically measured and understood. Toward this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement suites capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises a multi-year, multi-phase effort that begins with the design, development, procurement, installation and testing of High Gain Array (HGA) systems in the Static Site at SEAFAC. Future phases, if approved, will upgrade the Underway Site at SEAFAC.</p>								

R-1 SHOPPING LIST - Item No.

118

# UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 16)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F1946 / SSN-21 Developments			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>5.448</b>	<b>3.883</b>	<b>3.708</b>	<b>3.057</b>	<b>3.093</b>	<b>3.726</b>	<b>3.078</b>	<b>3.135</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The SEAWOLF Submarine is a multi-mission ship that provides 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F1946 / SSN-21 Developments

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.483	0.395	0.670	1.263
RDT&E Articles Quantity				

FY-02 Accomplishments: Conducted 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). FY-03 Plan: Complete the analysis and reporting in compliance with Class plan and DOT&E requirements resulting from the Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL). FY-04 and FY-05 Plan: Conduct follow-on OPEVAL testing for the class.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.535	0.450	0.150	0.100
RDT&E Articles Quantity				

FY-02 Accomplishments: Conducted component shock tests and analysis and continued shock qualification for Contractor Furnished Equipment (CFE) and Government Furnished Equipment (GFE) in compliance with Class plans and DOT&E requirements. FY-03 Plan: Conduct component shock tests and analysis and continue shock qualification for CFE and GFE in compliance with Class plans and DOT&E requirements. FY-04 and FY-05 Plan: Completion of component shock tests and analysis for CFE and GFE in compliance with Class Plans and DOT&E requirements.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.000	0.000	0.000	0.000
RDT&E Articles Quantity				

FY-02 Accomplishments: Provided engineering and acquisition support for the development of the Valve Regulated Lead Acid (VRLA) battery technology to replace the flooded lead-acid battery technology.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F1946 / SSN-21 Developments

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.430	3.038	1.696	1.444
RDT&E Articles Quantity				

FY-02 Accomplishments: Re-engineering and correcting deficiencies in Non-Propulsion Electronics Systems (NPE) including Ship Control System (SCS) and Exterior Communications System (ECS). Multifunctional Crypto System Assessment and Development. Investigation of acoustic deficiencies, including Main Ballast Tanks and wind tunnel testing associated with Sail. Continue risk management efforts in all high risk areas. FY-03 Plan: Re-engineering and correction of NPE Systems, including SCS and ECS. Investigation of acoustic deficiencies associated with Main Ballast Tanks and Sail. Continue risk management efforts in all high risk areas. FY-04 Plan: Re-engineering of NPE Systems and investigation of acoustic deficiencies. FY-05 Plan: Re-engineering and correction of SCS and Dry Deck Shelter (DDS) Interface (TIDS Migration).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.192	0.250
RDT&E Articles Quantity				

FY-04 Plan: Technology insertion effort for the SSTG Governor Redesign. FY-05 Plan: Technology insertion effort for the Impressed Current Cathodic Protection (ICCP) System.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F1946 / SSN-21 Developments			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		5.711	3.981	4.262	3.102
Current BES/President's Budget: (FY04 President Controls)		5.448	3.883	3.708	3.057
Total Adjustments		-0.263	-0.098	-0.554	-0.045
Summary of Adjustments					
SBIR/STTR Transfer		-0.095	0.000	0.000	0.000
Congressional undistributed reductions		0.000	-0.034	0.000	0.000
Congressional rescissions		-0.012	0.000	0.000	0.000
Economic Assumptions		-0.015	-0.064	-0.084	-0.064
Reprogrammings		-0.049	0.000	0.000	0.000
Other Navy/OSD Adjustments		-0.092	0.000	-0.470	0.019
Subtotal		-0.263	-0.098	-0.554	-0.045
Schedule:					
Not applicable.					
Technical:					
Not applicable.					

R-1 SHOPPING LIST - Item No. 118

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F1946 / SSN-21 Developments
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) SCN #201200	10.877	2.324	0.970	30.901	0.002	0.000	0.000	0.000		8223.314
(U) OPN #51000/05, #094100/05	11.015	16.630	8.830	41.092	51.246	50.922	43.890	41.881		641.978
SEAWOLF shares the above OPN lines with PMS392 & PMS398. The large plus-ups in FY-05 to 09 belong to the SSGN Program (PMS398). SEAWOLF OPN controls end in FY-02.										
(U) MILCON P-398										27.300
(U) Related RDT&E:										
(U) P.E. 0603570N (Advanced Nuclear Power Systems)										
(U) P.E. 0604524N (Submarine Combat Systems)										
(U) P.E. 0604567N (Ship Contract Design/Live Fire T&E)										

**E. 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.

**F. MAJOR PERFORMERS: \*\***

Naval Surface Warfare Center (NSWC) Carderock, MD - FY-02 \$1.520; FY-03 \$1.626; FY-04 \$1.616; FY-05 \$1.058 (Acoustics, NPE, Shock, Test & Evaluation, and Tech Insertion).  
 Naval Undersea Warfare Center (NUWC) Newport RI - FY-05 \$.500 (Test and Evaluation)  
 SPAWAR San Diego CA - FY-02 \$.800; FY-03 \$.700 - Multi-Function Crypto System Development  
 Award dates are various and are dependent upon availability of funds each fiscal year as dictated by the CRA.

\* Not required for Budget Activities 1,2,3, and 6  
 \*\* Required for DON and OSD submit only.

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			F1946 / SSN-21 Developments						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	369.541	0.055	Various	0.075	Various	0.100	Various	0.200	369.971	369.971
Systems Engineering	SS/CPFF	NGNN Newport News VA	118.601	0.355	Various	0.375	Various	0.100	Various	0.200	119.631	119.631
Systems Engineering	WR/RC	NSWC Carderock, MD	317.639	1.094	Various	1.566	Various	1.058	Various	4.085	325.442	
Systems Engineering	WR/RC	NUWC Newport, RI	49.158	0.250	Various	0.403	Various	0.000	Various	0.000	49.811	
Systems Engineering	Various	Various	469.201	1.352	Various	0.619	Various	0.536	Various	8.087	479.795	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			1,324.140	3.106		3.038		1.794		12.572	1,344.650	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			F1946 / SSN-21 Developments						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	68.994
Developmental Test & Evaluation	WR	NSWC Carderock MD	95.800	0.150	Various	0.050	Various	0.000		0.000	96.000	
Developmental Test & Evaluation	Various	Various	124.296	0.245	Various	0.620	Various	1.263	Various	0.460	126.884	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			289.090	0.395		0.670		1.263		0.460	291.878	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support & ETS	Various	Various	48.075	0.382		0.000		0.000		0.000	48.457	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			48.075	0.382		0.000		0.000		0.000	48.457	
Remarks:												
Total Cost			1,661.305	3.883		3.708		3.057		13.032	1,684.985	
Remarks:												

R-1 SHOPPING LIST - Item No. 118

# UNCLASSIFIED

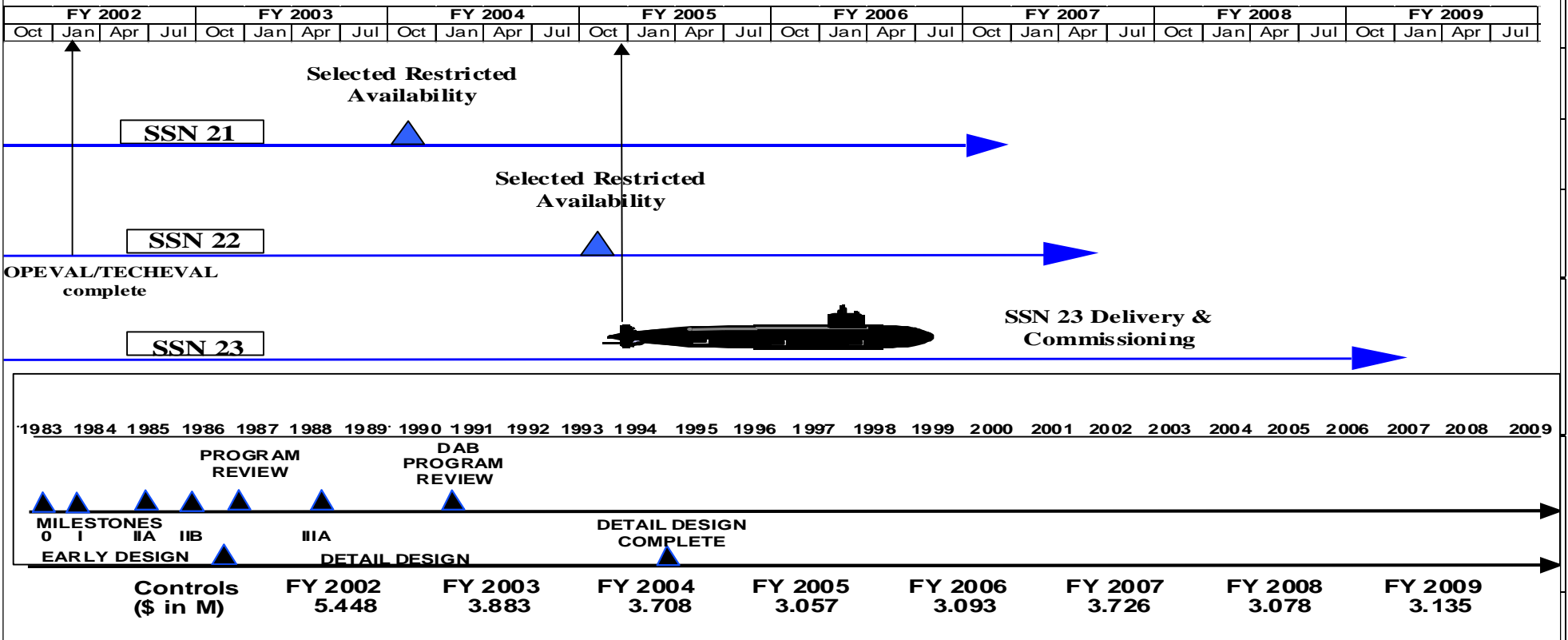
**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 8 of 16)

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile															DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>					PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments					PROJECT NUMBER AND NAME F1946 / SSN-21 Developments									

# Program Timeline



R-1 SHOPPING LIST - Item No. 118

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

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# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	0.000	12.470	9.774	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This is a new start effort.**

The SEAWOLF Class submarine is a multi-mission ship that provides numerous unprecedented submarine performance capabilities such as more capable combat systems, greater weapon capacity and capability, advanced reactor, improved acoustic sensors, increased operating depth, improved ship control, and enhanced survivability. Among these capabilities is an unprecedented acoustic stealth performance as a result of an order of magnitude improvement in ship quieting.

Maintaining the acoustic stealth advantage and upholding the effectiveness and survivability of the SEAWOLF and future class submarines require that radiated acoustic signatures are periodically measured and understood. Toward this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement suites capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises of a multi-year, multi-phase effort that begins with the design, development, procurement, installation and testing of High Gain Array (HGAs) systems in the Static Site at SEAFAC. Future phases, if approved, will upgrade the Underway Site at SEAFAC.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	12.470	9.774	0.000
RDT&E Articles Quantity				

FY03 Plan: Detailed system design of the SEAFAC Static Site High Gain Arrays, suspension systems, and associated laboratory measurement systems. Initiate procurement of long lead time material such as cables, sensors, data acquisition equipment.  
 FY04 Plan: System development and integration.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	0.000
Current BES/President's Budget: (FY04 President Controls)		0.000	12.470	9.774	0.000
Total Adjustments		0.000	12.470	9.774	0.000
Summary of Adjustments					
Congressional program reductions		0.000	0.000	0.000	0.000
Congressional undistributed reductions		0.000	-0.074	0.000	0.000
Congressional rescissions		0.000	0.000	0.000	0.000
SBIR/STTR Transfer		0.000	0.000	0.000	0.000
Economic Assumptions		0.000	-0.206	-0.226	0.000
Reprogrammings		0.000	0.000	0.000	0.000
Congressional increases		0.000	12.750	10.000	0.000
Subtotal		0.000	12.470	9.774	0.000
Schedule:					
Not applicable.					
Technical:					
Not applicable.					

R-1 SHOPPING LIST - Item No. 118

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not applicable.										
<b>E. ACQUISITION STRATEGY: *</b>										
Not applicable.										
<b>F. MAJOR PERFORMERS: **</b>										
Naval Surface Warfare Center (NSWC) Carderock Division, MD for system design and development. Prime contractor (TBD) and subcontractors (TBD) for system development, procurement, integration, installation, and test.										
* Not required for Budget Activities 1,2,3, and 6 ** Required for DON and OSD submit only.										

R-1 SHOPPING LIST - Item No. 118

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			F9233 / SEAFAC Range Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	TBD		8.508	Various	7.974	Various				16.482	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	NSWC Carderock MD		3.962	TBD	0.400	TBD				4.362	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	12.470		8.374		0.000		0.000	20.844	
Remarks: Award dates are dependent upon availability of funds at the beginning of each fiscal year as dictated by the CRA.												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			F9233 / SEAFAC Range Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Carderock MD				1.400	TBD				1.400	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		1.400		0.000		0.000	1.400	
Remarks: Award date is dependent upon availability of funds at the beginning of each fiscal year as dictated by the CRA.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	12.470		9.774		0.000		0.000	22.244	
Remarks:												



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE Submarine Tactical Warfare System/0604562N			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	37.209	25.089	32.238	35.670	40.631	54.696	56.482	57.436
F0236/SSN COMB CONT SYS IMP (ENG)	37.209	25.089	32.238	35.670	40.631	54.696	56.482	57.436
<b>Defense Emergency Response Funds (DERF) Funds: Not Applicable</b>								
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> This program develops software and hardware upgrades to integrate improved weapons capabilities within submarine Combat Control System (CCS) MK1, MK2, AN/BSY-1 (Combat Control), AN/BSY-2, SSGN and Virginia Class (Post PSA), 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 development and fleet introduction of CCS MK2 Program D0 Block 1C ECP 004. CCS MK2 converged multiple submarine combat system developments into a single effort to minimize submarine life cycle costs, across SSN 688, SSN 688I, SSBN 726 (Mod 3) and SSN 21 (Mod 5), SSGN, Virginia Classes. CCS MK2 Program D0 Block 1C ECP 004 provides a modular software architecture, introduces Tomahawk Block 4 and replaces additional obsolete equipment. MK2 Block 1C ECP 5 will replace legacy weapons interface equipment. The program also segregates CCS into a Tactical Control System and a Weapons Control System concurrent with the development of CCS MK2 V5. This allows for a more open architecture to accommodate Advance Processing Build (APB). This process will allow for annual performance upgrades to the Tactical Control System independent of weapons. Beginning in FY04, initiate a Non Propulsion Electronics System Engineering, Integration and Test Program.</p>								

R-1 SHOPPING LIST - Item No. 119

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Exhibit R-2a, RDTEEN Project Justification  
(Exhibit R-2a, page 1 of 10)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME F0236/SSN COMB CONT SYS IMP (ENG)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	21.079	14.368	6.329	9.000
RDT&E Articles Quantity				

Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class and SSN 21 Class.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.150	3.721	7.704	11.072
RDT&E Articles Quantity				

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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.380	4.000	10.500	0.000
RDT&E Articles Quantity				

Development of AN/BSG-1 and mission distribution system upgrades.

R-1 SHOPPING LIST - Item No. 119

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME F0236/SSN COMB CONT SYS IMP (ENG)

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.188	0.000	0.000	0.000
RDT&E Articles Quantity				

Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Products into Backfit Submarine Combat Control Programs.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	3.000	7.705	12.283
RDT&E Articles Quantity				

Non Propulsion Electronics System Engineering, Integration and Test Program. The program also segregates CCS into a Tactical Control System and a Weapons Control System concurrent with the development of CCS MK2 V5.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.412	0.000	0.000	0.000
RDT&E Articles Quantity				

Develop maintenance build and tech refresh combat control systems.

R-1 SHOPPING LIST - Item No. 119

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME F0236/SSN COMB CONT SYS IMP (ENG)

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	3.315
RDT&E Articles Quantity				

Development of MK2 Block 1C ECP 5.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 119

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM	PROJECT NUMBER AND NAME F0236/SSN COMB CONT SYS IMP (ENG)

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 President Controls)	38.884	13.975	21.326	42.904
Current BES/President's Budget (FY04 President Controls)	37.209	25.089	32.238	35.670
Total Adjustments	-1.675	11.114	10.912	-7.234

Summary of Adjustments

SBIR	-0.771	0.000	0.000	0.000
Syscom Contractor Support	0.000	0.000	-0.536	-0.629
NWCF Rates	0.000	0.000	0.030	0.054
Economic Assumptions	-0.106	-0.144	0.000	0.000
Reprogrammings	-0.798	-0.442	11.418	-6.659
Congressional add: CCS Mk2 Modernization	0.000	8.700	0.000	0.000
Congressional add: Accel Fleetwide Mod	0.000	3.000	0.000	0.000
Subtotal	-1.675	11.114	10.912	-7.234

Schedule:

- Added SWS Modernization to schedule due to budget line being incorporated into Combat Control System.
- Changed AN/BSG-1 DT/OT to reflect updated Acquisition Program Baselines to program.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 119

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			PROJECT NUMBER AND NAME F0236/SSN COMB CONT SYS IMP (ENG)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN/BA-4 54200	38.300	54.254	68.032	100.952	105.906	87.148	92.701	94.209	CONT.	CONT.
<p>Related RDT&amp;E:            PE 0204229N (Tomahawk &amp; Tomahawk Missile Planning Center)            PE 0205632N (MK 48 ADCAP)            PE 0603504N (Advanced Submarine Combat Systems Dev.)            PE 0604503N (SSN-688 and Trident Modernization)            PE 0604707N (Submarine Electronic Warfare Architecture/Eng. Support)</p>										
<b>E. ACQUISITION STRATEGY: CCS MK2 Block 1C:</b>										
<ul style="list-style-type: none"> <li>- 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.</li> <li>- Critical Design Review was held Feb 2002.</li> <li>- CCS MK2 Block 1C Baseline, Mod 3 FOT&amp;E completed Jun 2002.</li> <li>- Release-To-Fleet is Mar 2003.</li> <li>- Further CCS MK2 Block 1C development upgrades (ECP004 &amp; beyond) will be completed commencing with contract award 2nd QTR 2003.</li> <li>- APB (T) products associated with CCS MK2 Block 1C Release-To- Fleet Jan 2003, Jan 2004, Jan 2006, Jan 2007.</li> </ul>										
<b>F. MAJOR PERFORMERS: **</b>										
<p>Raytheon Portsmouth, RI - Software Development for Mod 0 / 1, 2 ,3 and System Development for AN/BSG-1 - June 1997            NUWC Newport, RI - Government Engineering</p>										
<p>* Not required for Budget Activities 1,2,3, and 6            ** Required for DON and OSD submit only.</p>										

R-1 SHOPPING LIST - Item No.119

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-5</b>			0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			F0236/SSN COMB CONT SYS IMP (ENG)												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract						
AN/BSG-1 System Development	CPIF	Raytheon Portsmouth, RI	16.143	1.177	12/02	0.000		0.000		0.000	17.320							
Ancillary Hardware Dev (AN/BSG-1)	PD	PEO-CMU Pax River, MD	9.003	1.582	Various	6.000	Various	0.000		0.000	16.585							
Government Engineering	WR	NUWC Newport, RI	52.089	2.547	Various	17.380	Various	8.300	Various	CONT.	CONT.							
TOMAHAWK Reliability	SBIR	Progency	1.635	0.000		0.000		0.000		CONT.	CONT.							
CCS MK2 Block 1C ECP	FFRDC	MITRE	0.754	0.383	11/02	0.508	10/03	0.513	10/04	CONT.	CONT.							
COTS Hardware & Software	CPFF	DDL Omni	7.000	1.500	01/03	2.000	10/03	2.000	10/04	CONT.	CONT.							
											0.000							
											0.000							
											0.000							
											0.000							
											0.000							
Subtotal Product Development			86.624	7.189		25.888		10.813		0.000	130.514							
Remarks: <table style="width: 100%; margin-left: 20px;"> <tr> <td style="width: 30%;"><u>Contract</u></td> <td style="width: 30%;"><u>Award/Oblig</u></td> </tr> <tr> <td>Block 1C</td> <td>Dec 00</td> </tr> <tr> <td>AN/BSG-1</td> <td>Jun 97</td> </tr> </table>													<u>Contract</u>	<u>Award/Oblig</u>	Block 1C	Dec 00	AN/BSG-1	Jun 97
<u>Contract</u>	<u>Award/Oblig</u>																	
Block 1C	Dec 00																	
AN/BSG-1	Jun 97																	
Development Support Equipment											0.000							
Software Development (Mod0/1,2,3)	CPFF	Raytheon Portsmouth, RI	21.000	12.188	Various	0.000		0.000		CONT.	CONT.							
Software Development (Mod 5)	CPAF	DSR		0.100	12/02	4.600	10/03	7.459	10/04		12.159							
Software Development (Mod 5)	CPAF	Raytheon Portsmouth, RI		3.900	12/02													
Software Development (ECP 5)	CPAF	Raytheon Portsmouth, RI						3.315	10/04		3.315							
Software Development (SWS)	CPFF	Raytheon Portsmouth, RI				0.000		12.283	10/04		12.283							
Technical Data											0.000							
GFE											0.000							
Configuration Management											0.000							
Subtotal Support			21.000	16.188		4.600		23.057		0.000	64.845							
Remarks:																		

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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604562N/SUBMARINE TACTICAL WARFARE SYSTEM			F0236/SSN COMB CONT SYS IMP (ENG)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	7.800	1.112	01/03	1.000	10/03	1.000	10/04	CONT.	CONT.	
Operational Test & Evaluation	Various	Various	7.169	0.500	01/03	0.400	10/03	0.400	10/04	CONT.	CONT.	
Test & Evaluation	Various	Various	1.295	0.000		0.000		0.000				1.295
GFE												0.000
												0.000
												0.000
												0.000
Subtotal T&E			16.264	1.612		1.400		1.400		0.000		20.676
Remarks:												
Contractor Engineering Support												0.000
Government Engineering Support												0.000
Program Management Support	CPFF	EG&G Arlington, VA	8.481	0.000		0.250	10/03	0.300	10/04	CONT.	CONT.	
Travel	PD	NAVSEA Arlington, VA	0.350	0.100	12/02	0.100	10/03	0.100	10/04	CONT.	CONT.	
Labor (Research Personnel)												0.000
SBIR Assessment												0.000
Subtotal Management			8.831	0.100		0.350		0.400		0.000		9.681
Remarks: Contract EG&G Award/Oblig Dec 01												
Total Cost			132.719	25.089		32.238		35.670		0.000		225.716
Remarks:												

R-1 SHOPPING LIST - Item No. 119

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EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>																														
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
<b>RDT&amp;E, N / BA-5</b>												0604562N / Submarine Tactical Warfare System												F0236 / Submarine Combat System Improvements								
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
CCS Mk2 Block 1C Baseline																																
Mod 3																																
CCS Mk2 Block 1C ECP 4																																
Mod 2																																
Mod 0/1																																
Mod 3																																
Mod 5 (WC/TC Segregation)																																
CCS Mk2 Block 1C ECP 5																																
APB(T) Integration																																
AN/BSG-1																																
SWS Modernization																																
<b>Test &amp; Evaluation Milestones</b>																																
CCS Mk2 Block 1C																																
ECP 4																																
Mod 2																																
Mod 5																																
ECP 5																																
<b>Development Test</b>																																
AN/BSG-1																																
SWS Modernization																																
<b>Operational Test</b>																																
AN/BSG-1																																
SWS Modernization																																
<b>Production Milestones</b>																																
<b>Deliveries</b>																																

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Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604562N / Submarine Tactical Warfare System				F0236 / Submarine Combat System Improvements			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
CCS MK2 Block 1C ECP 4, Mod 2 - Development	1Q - 4Q							
CCS MK2 Block 1C Baseline, Mod 3 - FOT&E	3Q							
CCS MK2 Block 1C ECP 4, Mod 3 - Development	3Q - 4Q	1Q						
CCS MK2 Block 1C ECP 4, Mod 0/1 - Development	4Q	1Q - 2Q						
AN/BSG-1 - SDCT	4Q							
CCS MK2 Block 1C ECP 4, Mod 2 - Phase 1 DT/OT	4Q	1Q - 2Q						
CCS MK2 Block 1C ECP 5 - Development		1Q - 4Q	1Q - 4Q	1Q - 4Q				
CCS MK2 Block 1C Baseline, Mod 3 - SDCT		1Q - 2Q						
APB(T) Integration - Release To Fleet		2Q						
CCS MK2 Block 1C ECP 4, Mod 2 - Phase 1 RTF		2Q						
CCS MK2 Block 1C Baseline, Mod 3 - RTF		2Q						
CCS MK2 Block 1C ECP 4, Mod 0/1 - SDCT		2Q - 3Q						
CCS MK2 Block 1C ECP 4, Mod 2 - Phase 2 DT/OT		3Q - 4Q						
AN/BSG-1 - DT			4Q					
CCS MK2 Block 1C ECP 4, Mod 2 - Phase 2 RTF		4Q						
SWS Modernization - Development			1Q - 3Q					
AN/BSG-1 - OT				1Q				
CCS MK2 Block 1C ECP 4, Mod 0/1 - RTF			1Q					
APB(T) Integration - Release To Fleet			2Q					
AN/BSG-1 - MS III			3Q					
SWS Modernization, SWS 04 - TechEval			3Q - 4Q					
CCS MK2 Block 1C ECP 5 - Development				1Q - 4Q				
SWS Modernization, SWS 04 - OpEval				1Q - 3Q				
APB(T) Integration - Release To Fleet				2Q				
SWS Modernization, SWS 05 - TechEval				3Q - 4Q				
CCS MK2 Block 1C ECP 5 - DT/OT					1Q - 2Q			
CCS MK2 Block 1C ECP 4, Mod 5 - DT/OT					1Q - 2Q			
SWS Modernization, SWS 05 - OpEval					1Q - 3Q			
APB(T) Integration - Release To Fleet					2Q			
CCS MK2 Block 1C ECP 4, Mod 5 - RTF					3Q			
CCS MK2 Block 1C ECP 5 - V3 RTF					3Q			
SWS Modernization, SWS 06 - TechEval					3Q - 4Q			
CCS MK2 Block 1C ECP 5 - V2 RTF						1Q		
SWS Modernization, SWS 06 - OpEval						1Q		
CCS MK2 Block 1C ECP 5 - V1 RTF						2Q		
APB(T) Integration - Release To Fleet						2Q		

R-1 SHOPPING LIST - Item No. 119

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**Exhibit R-4a, Schedule Detail**

(Exhibit R-4a, page 10 of 10)

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N							
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	122.405	181.098	138.017	140.018	115.004	91.371	50.352	27.038
42301 / CVN 77 Design	82.066	49.189	28.674	25.648	5.919	0.800	0.000	0.000
44007 / CVN 21 LFT&E	0.000	9.147	8.797	8.780	8.388	8.373	0.686	1.065
44008 / CVN 21 Total Ship Integration	0.000	68.123	23.730	38.213	35.454	22.329	6.871	0.000
S1803 / Ship Contract Design	39.374	15.520	7.549	18.316	21.855	11.844	10.246	10.332
S2198 / Life Fire Test and Evaluation	0.000	0.000	4.394	4.492	2.729	1.548	0.000	0.000
S2465 / LHA(R)	0.000	0.000	64.873	44.569	40.659	46.477	32.549	15.641
S9073 / Titanium Water Tight Door	0.965	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S9235 / LHA R Design	0.000	9.780	0.000	0.000	0.000	0.000	0.000	0.000
S9236 / LHA R Transfer from LHD	0.000	29.339	0.000	0.000	0.000	0.000	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of engineering, programmatic and acquisition documentation including ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This PE also supports the Congressionally mandated Live Fire Test and Evaluation program for new ship designs.

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 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.

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.



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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>82.066</b>	<b>49.189</b>	<b>28.674</b>	<b>25.648</b>	<b>5.919</b>	<b>0.800</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project encompasses CVN 77 design. For FY02 and prior, it also encompassed CVNX, now called CVN 21, design and LFT&E. (CVN-21 LFT&E is now budgeted under a separate project, CVN-21 Design, 44007.) 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. The CVN 77 Warfare Systems Integration (WSI) 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 CVN 77 design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.

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 21. 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA - 5	<b>PROGRAM ELEMENT NUMBER AND NAME</b> Ship Contract Design/LFT&E PE 0604567N	<b>PROJECT NUMBER AND NAME</b> CVN 77 Design 42301		
<b>B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	70.835	0.000	0.000	0.000
RDT&E Articles Quantity				
<p>Future Carrier design – Commence resolution of future carrier design issues and update contract data package, including sytem descriptions, system diagrams, design drawings and specifications in areas where near- term LLTM advanced purchase and early fabrication work may be impacted. Accommodate changes to future carriers, systems, and 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). Use 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>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.947	0.000	0.000	0.000
RDT&E Articles Quantity				
<p>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>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.284	0.000	0.000	0.000
RDT&E Articles Quantity				
<p>CVNX 1 (CVN 21 FY03 and Out) LFT&amp;E - Conduct, through completion, a vulnerability assessment of the CVNX design to address LFT&amp;E concerns identified in the TEMP. Conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&amp;E concerns, and conduct LFT&amp;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>				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	49.189	28.674	25.648
RDT&E Articles Quantity				

CVN 77 Design:  
 Complete warfare system re-baseline design and conduct re-baseline review. Develop, review, adjudicate, and approve the warfare system CDP. Monitor PARM improvements targeted at reducing the operational and support costs of the ship's warfare system, specifically for data exchange across operational areas, data fusion, and integrated displays for operators, and consideration for use of the Virginia Advanced Shipbuilding and Carrier Integration Center (VASCIC). Develop warfare system improvement Engineering Change Proposals (ECPs), including flexible island design modifications. Sustain efforts to insure warfare system interoperability and design consistency in accordance with the Navy's life cycle support strategy.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	97.644	132.033	69.550	48.927
Current President's Budget: (FY 04 Pres Controls)	82.066	49.189	28.674	25.648
Total Adjustments	-15.578	-82.844	-40.876	-23.279
Summary of Adjustments				
Congressional program reductions	0.000			
Congressional undistributed reductions	0.000			
Congressional rescissions	0.000			
SBIR/STTR Transfer	-1.843			
Economic Assumptions/Miscellaneous Reductions	-1.872	-1.878	-1.506	-1.563
Programmatic adjustments	-11.863	-80.966	-39.370	-21.716
Subtotal	-15.578	-82.844	-40.876	-23.279

Schedule:  
Not Applicable

Technical:  
Not Applicable.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>				PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>											
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
BLI 200100 Carrier Replacement Program	135.3	395.5	1186.6	626.0	611.8	2983.9	3811.8	3074.4	Continuing	Continuing	
PE 0603512N Carrier System Development	149.6	101.8	141.8	160.1	141.6	92.2	290.2	370.8	Continuing	Continuing	
 <b>E. ACQUISITION STRATEGY:</b>											
<p>Future Carriers will be acquired/managed using a phased technology insertion strategy. Technologies will reduce total ownership costs on Future Carriers and the previous nine ships of the NIMITZ class. Future Carrier Detail Design and Construction Contracts have historically been awarded on a sole source basis to Northrop Grumman Newport News Shipbuilding (NGNN). NGNN has also been awarded CPAF R&amp;D contracts for the CVN 77 warfare system and CVN 21 IPPD efforts .</p>											
 <b>F. MAJOR PERFORMERS:</b>											
<p>Northrop Grumman Newport News Shipbuilding , Newport News Virginia            SPAWAR, San Diego Ca            NAVSEA, Washington DC</p>											

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>				PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CVN 77 Product Development	PR,SS	NGNN, Newport News VA	100.880	24.000	12/02	5.000	12/03	5.000	12/04	Continuing	Continuing	
	SS, CPFF	Bettis Atomic Pwr Labs, Pa	42.691							0.000	42.691	42.691
	WR	NAWCS Lakehurst NJ, Pax Md	5.278	0.360	12/02	0.450	12/03	0.750	12/04	Continuing	Continuing	Continuing
	WR	NSWC Dahlgren	15.018	7.402	12/02	2.500	12/03	1.000	12/04	Continuing	Continuing	Continuing
	PD/WR	SPAWAR, San Diego Ca	3.875	6.693	12/02	7.500	12/03	6.000	12/04	Continuing	Continuing	Continuing
	PD	NAVSEA Wash DC	2.030	4.919	12/02	7.100	12/03	5.000	12/04	Continuing	Continuing	Continuing
	Various	Miscellaneous	27.281	5.415	12/02	5.824	12/03	7.498	12/04	Continuing	Continuing	Continuing
	WR	NSWC Carderock	1.559	0.300	12/02	0.200	12/03	0.300	12/04	Continuing	Continuing	Continuing
CVNX Product Development	PR,SS	NGNN, Newport News VA	11.805							0.000	Continuing	
	MIPR	Anteon Corp, Arlington Va	1.816							0.000	Continuing	
	PD	NAVAIR, Pax River Md	7.091							0.000	Continuing	
	Various	Miscellaneous	1.472							0.000	Continuing	
Subtotal Product Development			220.796	49.089		28.574		25.548		0.000	Continuing	
Remarks: CVN 21 Product Development efforts for FY03 and subsequent years are covered under Project 44008												
Development Support												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000		

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>				PROJECT NUMBER AND NAME <b>CVN 77 Design 42301</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation	WR	NSWC Carderock	8.541									Continuing
	Various	Miscellaneous	0.743									Continuing
Tooling												
GFE												
Award Fees												
Subtotal T&E			9.284	0.000		0.000		0.000		0.000		
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel			0.075	0.100		0.100		0.100				
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.075	0.100		0.100				0.000		
Remarks:												
Total Cost			230.155	49.189		28.674		25.648		0.000		
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			PROJECT NUMBER AND NAME <b>CVN 21 LFT&amp;E 44007</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>9.147</b>	<b>8.797</b>	<b>8.780</b>	<b>8.388</b>	<b>8.373</b>	<b>0.686</b>	<b>1.065</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project encompasses CVN 21 LFT&E efforts. Title 10, US Code, Section 2366, CVN 21 Operational Requirements Document (ORD) and the CVN 21 Test and Evaluation Master Plan, prescribe requirements for Live Fire Test and Evaluation (LFT&E). The purpose of LFT&E is to evaluate weapons and weapons systems in a realistic, combat environment and to identify any potential, mission threatening vulnerabilities early in the development process, or while still in low-rate production, when there is time to take corrective action.

The high unit cost of CVN 21 and its shipboard systems, and the limited number of ships to be produced, preclude consideration of destructive testing of a full-up CVN 21 with threats of the type that might be expected in combat. Consequently, the Navy must rely on other means to determine that CVN 21 will be able to survive and carry out its missions in the face of the threats identified in the CVN 21 System Threat Assessment Report.

The LFT&E strategy adopted for the CVN 21 class accounts for the uncertainty in its design features. The strategy assumes that as the program progresses through the stages of ship design, descriptive detail of CVN 21 will increase and, hence, so will the ability to evaluate its survivability. The strategy also accepts that the greatest influence on ship design is possible in its early stages. Hence, the strategy is constructed to begin with a consideration of general survivability measures, at a low level of detail, and progress to a specific assessment of survivability at a high level of detail.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 21 LFT&amp;E 44007</b>

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	9.147	8.797	8.780
RDT&E Articles Quantity				

Conduct susceptibility assessment of the CVN 21 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, and initiate vulnerability modeling of the CVN 21 for Vulnerability Assessment Report #3. Initiate survivability modeling improvements. Prepare, construct and test full and scaled surrogate model targets as required by TEMP 1610 and the LFT&E Management Plan. Conduct analyses and tests at SHADWELL to evaluate ordnance in CVN 21 representative locations, to review hangar bay fire spread, to determine desmoking and dewatering capabilities, and to assess fire main vulnerability. Conduct intensive vulnerability modeling of CVN 21 for Vulnerability Assessment Report #3. Continue survivability model improvements to support CVN 21 vulnerability assessment. In support of ORD vulnerability requirements testing, conduct representative CVN 21 fire and smoke spread tests, flight deck fire tests, and main drainage tests; assess designed passive damage control features and conduct recoverability modeling tests.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 21 LFT&amp;E 44007</b>			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	0.000
Current President's Budget: (FY04 Pres Controls)		0.000	9.147	8.797	8.780
Total Adjustments		0.000	9.147	8.797	8.780
Summary of Adjustments					
Congressional program reductions		0.000			
Congressional undistributed reductions		0.000			
Congressional rescissions		0.000			
SBIR/STTR Transfer		0.000			
Economic Assumptions		0.000			
Programmatic adjustments		0.000	9.147	8.797	8.780
Congressional increases		0.000			
Subtotal		0.000	9.147	8.797	8.780
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>				PROJECT NUMBER AND NAME <b>CVN 21 LFT&amp;E 44007</b>				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>											
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
BLI 200100 Carrier Replacement Program	135.3	395.5	1186.6	626.0	611.8	2983.9	3811.8	3074.4	Continuing	Continuing	
PE 0603512N Carrier System Development	149.6	101.8	141.8	160.1	141.6	92.2	290.2	370.8	Continuing	Continuing	
<b>E. ACQUISITION STRATEGY:</b>											
<p>The CVN 21 will be the first ship of the new class of aircraft carriers consisting of 12 ships. Due to the length and cost of construction, each carrier will be contracted for separately. The CVN 21 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system, advanced arresting gear system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the Nimitz Class. Additionally, the following warfighting benefits will be realized: increased sortie generation rate, improved ship self defense capability, increase launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.</p>											
<b>F. MAJOR PERFORMERS:</b>											
NSWC Caderock Maryland											

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			PROJECT NUMBER AND NAME <b>CVN 21 LFT&amp;E 44007</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	WR	NSWC Carderock, MD	0.000	7.600	12/02	7.980	12/03	8.379	12/04	Continuing	Continuing	
	Various	Miscellaneous	0.000	1.547	12/02	0.817	12/03	0.401	12/04	Continuing	Continuing	
Subtotal T&E			0.000	9.147		8.797		8.780		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000		
Remarks:												
Total Cost			0.000	9.147		8.797		8.780		0.000		
Remarks:												

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			PROJECT NUMBER AND NAME <b>CVN 21 Total Ship Integration 44008</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>68.123</b>	<b>23.730</b>	<b>38.213</b>	<b>35.454</b>	<b>22.329</b>	<b>6.871</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project encompasses CVN 21 total ship integration 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. The CVN 21 total ship 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 CVN 21 design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.

CVN 21 Total Ship Integration, the integration of major systems into ship design, includes redesign and rearrangement of ship components; redesign of hull, mechanical and electrical (HM&E) and auxiliary systems (air-conditioning and ventilation, power distribution and generation, 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. This project also encompasses those tasks required to develop the contract data package necessary to support CVN 21 procurement.

CVN 21 Total Ship Integration FY02 and prior efforts were funded in PE0603512N, Projects 42208 and 42693, and PE0604567N Project 42301.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 21 Total Ship Integration 44008</b>		
<b>B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	68.123	23.730	38.213
RDT&E Articles Quantity				
<p>Resolve CVN 21 design issues and update 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 fabrication of prototype MTG and develop prototype qualification test plans. Accomplish 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.</p>				

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>	PROJECT NUMBER AND NAME <b>CVN 21 Total Ship Integration 44008</b>			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	0.000
Current President's Budget: (FY 04 Pres Controls)		0.000	68.123	23.730	38.213
Total Adjustments		0.000	68.123	23.730	38.213
Summary of Adjustments					
Congressional program reductions		0.000			
Congressional undistributed reductions		0.000			
Congressional rescissions		0.000			
SBIR/STTR Transfer		0.000			
Economic Assumptions		0.000			
Programmatic adjustments		0.000	68.123	23.730	38.213
Congressional increases		0.000			
Subtotal		0.000	68.123	23.730	38.213
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>				PROJECT NUMBER AND NAME <b>CVN 21 Total Ship Integration 44008</b>				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>											
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
BLI 200100 Carrier Replacement Program	135.3	395.5	1186.6	626.0	611.8	2983.9	3811.8	3074.4	Continuing	Continuing	
PE 0603512N Carrier System Development	149.6	101.8	141.8	160.1	141.6	92.2	290.2	370.8	Continuing	Continuing	
<b>E. ACQUISITION STRATEGY:</b>											
<p>The CVN 21 will be the first ship of the new class of aircraft carriers consisting of 12 ships. Due to the length and cost of construction, each carrier will be contracted for separately. The CVN 21 will feature a new nuclear propulsion and electrical generation/distribution system, new electromagnetic aircraft launching system, advanced arresting gear system, all electric auxiliaries, warfare system improvements, survivability enhancements, improved weapons handling, and improved aircraft servicing. These design features will result in lower manpower and total ownership costs as compared to the Nimitz Class. Additionally, the following warfighting benefits will be realized: increased sortie generation rate, improved ship self defense capability, increase launch and recovery capability/flexibility, increased operational availability, and increased flexibility to support future upgrades.</p>											
<b>F. MAJOR PERFORMERS:</b>											
<p>Northrop Grumman Newport News NSWC Carderock</p>											



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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			<b>CVN 21 Total Ship Integration 44008</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Total Ship Integration	WX	NSWC Carderock	0.000	4.100	12/02	3.722	12/03	3.890	12/04	Continuing	Continuing	
	SS, CPAF	NGNN, Newport News Va	0.000	48.400	12/02	11.749	12/03	22.548	12/04	Continuing	Continuing	
	MIPR	Anteon Corp, Arlington Va	0.000	5.430	12/02	3.601	12/03	3.785	12/04	Continuing	Continuing	
	Various	Miscellaneous	0.000	10.093	12/02	4.558	12/03	7.890	12/04	Continuing	Continuing	
Subtotal Product Development			0.000	68.023		23.630		38.113		0.000	Continuing	
Remarks: For FY02 and prior this effort was accomplished under PE 0603512N, projects 42208 and 42693												
Development Support												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000		
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT <b>Ship Contract Design/LFT&amp;E PE 0604567N</b>			PROJECT NUMBER AND NAME <b>CVN 21 Total Ship Integration 44008</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000				0.000		
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel				0.100		0.100		0.100				
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.100		0.100		0.100		0.000		
Remarks:												
Total Cost			0.000	68.123		23.730		38.213		0.000		
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N			PROJECT NUMBER AND NAME S1803 Ship Contract Design			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>39.374</b>	<b>15.520</b>	<b>7.549</b>	<b>18.316</b>	<b>21.855</b>	<b>11.844</b>	<b>10.246</b>	<b>10.332</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S1803 Ship Contract Design
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**B. Accomplishments/Planned Program**

Cruiser Conversion Program	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	15.820	15.520	1.799	8.899
RDT&E Articles Quantity				

Continued CG Planning Yard modernization design and engineering efforts; continued government efforts for design products, data base development, specifications development, and program planning; and continued system integration efforts for shipboard systems leading to Baseline 4 lead ship procurement award in FY04. Initiate CG Planning Yard modernization design and engineering efforts; government efforts for design products, data base development, specifications development, and program planning; and system integration efforts for shipboard systems leading to Baseline 2 and Baseline 3 lead ship procurement awards.

Heavy Lift LCAC Program	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	5.750	9.417
RDT&E Articles Quantity				

Resolution of technical design issues to support the development of a Heavy Lift LCAC variant resulting in a 50% increase in craft length over the standard LCAC to a LOA of 112 feet. Development of propellers, shrouds, gearboxes and lift fans to support the additional craft propulsion requirements will be required. Commonality with LCAC components will be maximized consistent with maintaining acceptable design margins given the additional requirements.

JCC(X) Design Development	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	23.554	0.000	0.000	0.000
RDT&E Articles Quantity				

Subsequent to the FY 2003 President's Budget, the Navy decided to terminate the JCC(X) program. Efforts funded in FY 2002 provided initial acquisition documentation, initiated government development and review of design trade studies, initiated mission package evolutionary requirements definition, and initiated definitization of ship functional design. These efforts will be concluded with the remaining FY 2002 funds.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S1803 Ship Contract Design
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**C. PROGRAM CHANGE SUMMARY:**

Funding CG Conversion Portion:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	44.213	52.512	21.748	9.232
Current President's Budget:	39.374	15.520	7.549	18.316
Total Adjustments	-4.839	-36.992	-14.199	9.084
Summary of Adjustments				
Congressional program reductions		-1.900		
Congressional undistributed reductions	-0.488	-0.025		
Congressional rescissions				
SBIR/STTR Transfer	-1.043			
Economic Assumptions	-0.117		-0.251	-0.584
Reprogrammings	-3.585	-0.167		
Programmatic Adjustments	0.394			
New Start of Heavy Lift LCAC Program			6.000	10.000
JCC(X) Program Termination		-34.900	-19.948	-0.332
Congressional increases				
Subtotal	-4.839	-36.992	-14.199	9.084

Schedule:

CG Conversion procurement contract awards reflect the Baseline 4 lead ship funded in FY04, and the Baseline 2 and Baseline 3 lead ships funded in the outyears. Design efforts funded in RDT&E,N leading to procurement contract awards have been scheduled accordingly. JCC(X) program was terminated. Heavy Lift LCAC development initiated in FY04.

Technical:

Not Applicable.

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S1803 Ship Contract Design
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN 202000 CG Conversion	65		194	439	469	447	679	692	2,301	5,287

**E. ACQUISITION STRATEGY:**

N/A

**F. MAJOR PERFORMERS:**

N/A

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design LFT&E 0604567N			S1803 Ship Contract Design						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CG Conv Class Design	SS/CPAF	Northrop Grumman, Pascago	CONT.	8.124	10/02	1.799	10/03	8.899	10/04	CONT.	CONT.	CONT.
CG Conv Electronic Systems Eng	C/CPAF	LMGES, Moorestown, NJ	CONT.	1.600	10/02					CONT.	CONT.	CONT.
CG Conv Electronic Systems Eng	C/CPAF	NAWCAD, Pax River, MD	CONT.	0.300	10/02					CONT.	CONT.	CONT.
CG Conv Ship Integration Eng	C/CPFF	JJMA/CSC/BAE, Arl, VA	CONT.	2.770	10/02					CONT.	CONT.	CONT.
CG Conv Ship Integration Eng	WR/RC	NSWC/DD, Dahlgren, VA	CONT.	1.000	10/02					CONT.	CONT.	CONT.
CG Conv Ship Integration Eng	C/CPFF	NSWC/SSES	CONT.	0.400	10/02					CONT.	CONT.	CONT.
HLCAC Propulsion System Design	TBD	TBD				3.500	12/03	4.000	12/04	CONT.	CONT.	CONT.
HLCAC Structural Design	TBD	TBD				1.202	03/04	2.800	12/04	CONT.	CONT.	CONT.
HLCAC Craft Integration/Systems En	TBD	TBD				0.550	03/04	1.290	12/04	CONT.	CONT.	CONT.
HLCAC Arrangements	TBD	TBD				0.000	03/04	0.500	12/04	CONT.	CONT.	CONT.
JCC(X)	Various	Various	CONT.							CONT.	CONT.	CONT.
Subtotal Product Development			CONT.	14.194		7.051		17.489		0.000	38.734	
Remarks:												
CG Conv Training System Developm	MISC	ATRC, LMGES, Moorestown	CONT.	0.000	10/02					CONT.	CONT.	CONT.
CG Conv Integrated Logistics Suppo	MISC	NSWC/PHD, PRC	CONT.	0.968	10/02					CONT.	CONT.	CONT.
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			CONT.	0.968		0.000		0.000		0.000	0.968	
Remarks:												

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design LFT&E 0604567N			S1803 Ship Contract Design						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CG Conv Developmental Test & Eval	C/CPFF	Grayhawk, Comtek, DTI, Log	CONT.	0.358	10/02					CONT.	CONT.	CONT.
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			CONT.	0.358		0.000		0.000		0.000	0.358	
Remarks:												
HLCAC Government Engineering Spt	TBD	NSWC DD: Panama City				0.480	12/03	0.800	12/04	CONT.	CONT.	CONT.
HLCACTravel						0.018	12/03	0.027	12/04	CONT.	CONT.	CONT.
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.498		0.827		0.000	1.325	
Remarks:												
Total Cost			CONT.	15.520		7.549		18.316		0.000	41.385	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N			PROJECT NUMBER AND NAME S2198 LFT&E			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>4.394</b>	<b>4.492</b>	<b>2.729</b>	<b>1.548</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project provides for the development and performance of Live Fire Test and Evaluation analyses, tests, trials, and other engineering information required to fulfill statutory and programmatic requirements for combat effective naval warfare.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S2198 LFT&E
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**B. Accomplishments/Planned Program**

Cruiser Conversion Program	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.394	4.492
RDT&E Articles Quantity				

Initiate suseptibility, vulnerability, and recoverability analyses for the Cruiser Conversion Program. Initiate planning and preparations for the Total Ship Survivability Trial planned for FY07.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S2198 LFT&E
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**C. PROGRAM CHANGE SUMMARY:**

Funding CG Conversion Portion:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	2.041	2.922
Current President's Budget:	0.000	0.000	4.394	4.492
Total Adjustments	0.000	0.000	2.353	1.570

Summary of Adjustments

Program funding revision				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions				
Programmatic adjustments			2.353	1.570
Congressional increases				
Subtotal	0.000	0.000	2.353	1.570

Schedule CG Conversion Portion:

CG Conversion LFT&E efforts are funded in RDT&E,N and have been scheduled consistent with the lead ship Total Ship Survivability Trial and Vulnerability Analysis Report in FY07.

Technical:

Not Applicable.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N	PROJECT NUMBER AND NAME S2198 LFT&E
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
SCN 202000 CG Conversion	65		194	439	469	447	679	692	2,301	5,287

**E. ACQUISITION STRATEGY:**

TBD

**F. MAJOR PERFORMERS:**

TBD

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design LFT&E 0604567N			S2198 LFT&E						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design LFT&E 0604567N			S2198 LFT&E						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CG Conversion LFT&E	TBD	TBD				4.394	10/03	4.492	10/04	4.277	13.163	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		4.394		4.492		4.277	13.163	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		4.394		4.492		4.277	13.163	
Remarks:												

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EXHIBIT R4, Schedule Profile																										DATE: <b>February 2003</b>						
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design LFT&E 0604567N										PROJECT NUMBER AND NAME S2198 LFT&E												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Baseline 4 Engineering																																
Baseline 2 Engineering																																
Baseline 3 Engineering																																
<b>Test &amp; Evaluation Milestones</b>																																
Suseptibility & Vulnerability Analyses																																
Recoverability Analyses																																
Total Ship Survivability Trial																																
Vulnerability Analysis Report																																
<b>Production Milestones</b>																																
CG Coersion																																
Procurement Awards																																
Deliveries																																



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design / LFT&E 0604567N			PROJECT NUMBER AND NAME S2465 LHA(R)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
S2465 / LHA(R)	0.000	0.000	64.873	44.569	40.659	46.477	32.549	15.641
S9235 / LHA R Design	0.000	9.780	0.000	0.000	0.000	0.000	0.000	0.000
S9236 / LHA R Transfer from LHD	0.000	29.339	0.000	0.000	0.000	0.000	0.000	0.000

**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. A 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 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 Operational Maneuver From the Sea, Ship to Objective Maneuver, and Seabased logistics, operational requirements will be modified for these new capabilities.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design / LFT&E 0604567N	PROJECT NUMBER AND NAME S2465 LHA(R)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	64.873	36.000
RDT&E Articles Quantity				

Transition from early stage design into the efforts leading to shipbuilding contract award for LHA(R) 1. Continue resolution of design issues and initiate the contract data package, including design drawings and specifications. Continue Total Ship Integration through the IPPD process to incorporate design improvements. Continue Warfare System design refinement. Continue improvements targeted at reducing operating and support costs. Continue development of system decision data packages. Continue development of requirements necessary to support DT/OT. Continue susceptibility assessments. Resolve low confidence areas in analytical models for LFT&E concerns and continue LFT&E surrogate test program. Transition from early stage

LHAR 2	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	8.569
RDT&E Articles Quantity				

Initiate design efforts leading to shipbuilding contract award for LHA(R) 2. Resolve design issues and initiate the contract data package, including design drawings and specifications. Continue Total Ship Integration through the IPPD process to incorporate design improvements. Continue Warfare System design refinement. Continue improvements targeted at reducing operating and support costs. Continue development of system decision data packages. Continue development of requirements necessary to support DT/OT. Continue susceptibility assessments. Resolve low confidence areas in analytical models for LFT&E concerns and continue LFT&E surrogate test program.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design / LFT&E 0604567N	PROJECT NUMBER AND NAME S2465 LHA(R)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000	0.000	0.000	14.377
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)		0.000	0.000	64.873	44.569
Total Adjustments		0.000	0.000	64.873	30.192
Summary of Adjustments					
Program acceleration				67.000	31.623
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions					
SBIR/STTR Transfer					
Economic Assumptions				-2.127	-1.431
Congressional increases					
Subtotal		0.000	0.000	64.873	30.192
Schedule:					
LHA(R) 1 shipbuilding contract award has been accelerated to FY07, and LHA(R) 2 shipbuilding contract award is planned for FY10. Design efforts funded in RDT&E,N leading to shipbuilding contract awards have been scheduled accordingly.					
Technical:					
Not Applicable.					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE:		<b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
<b>RDTE, N / BA-5</b>			Ship Contract Design / LFT&E 0604567N				S2465/S9235/S9236 LHA(R)				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>											
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	
PE 0603563N Ship Concept Advanced Design	0	0	0	0	0	0	0	0	0		
PE 0603564N Ship Prel. Design&Feas. Studies	0	0	0	0	0	0	0	0	0		
SCN 304100 LHA Replacement	0	0	0	0	0	3,094.041	0	0.000	TBD	TBD	
<b>E. ACQUISITION STRATEGY:</b>											
<p>The acquisition strategy for the contract design and for the detail design and construction of LHAR1 is continuing to be addressed within the Navy. One of the strategies being address is sole source procurement to Northrop Grumman Ship Systems, who has constructed all ships of the LHA and LHD classes. LHA(R) 1 configuration is Analysis of Alternatives Concept LHD Modified Repeat (Plug Plus), without radar cross section reduction, and with repeat of LHD 8 warfare system with fact of life changes.</p>											
<b>F. MAJOR PERFORMERS:</b>											
TBD											

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design / LFT&E 0604567N			S2465 LHA(R)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ship Design	TBD	TBD	0.000	0.000	03/03	43.873	10/03	21.569	10/04	CONT.	65.442	CONT.
Systems Engineering	TBD	TBD	0.000	0.000	03/03	21.000	10/03	23.000	10/04	CONT.	44.000	CONT.
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		64.873		44.569		0.000	109.442	
Remarks:												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			Ship Contract Design / LFT&E 0604567N			S2465 LHA(R)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	39.119		64.873		44.569		0.000	148.561	
Remarks:												



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME Ship Contract Design / LFT&E 0604567N								PROJECT NUMBER AND NAME S2465 LHA(R)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
Overarching Integrated Product Team Review							△																									
Continue Transitioning Design Efforts for LHA(R) 1										△																						
Begin Design of LHA(R) 2																																
Milestone B																																
<b>Test &amp; Evaluation Milestones</b>																																
<b>Production Milestones</b> LHA(R) 1 Shipbuilding Contract Award																																
Deliveries																																

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604574N / NAVY TACTICAL COMPUTER RESOURCES			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>38.596</b>	<b>15.803</b>	<b>2.267</b>	<b>2.456</b>	<b>2.548</b>	<b>3.060</b>	<b>3.107</b>	<b>3.157</b>
21353 Standard Hardware	<b>2.710</b>	<b>12.894</b>	<b>2.267</b>	<b>2.456</b>	<b>2.548</b>	<b>3.060</b>	<b>3.107</b>	<b>3.157</b>
29074 AN/UYQ-70 SUB Common Elect Equip Replacem	<b>6.543</b>							
20975 AN/UYQ-70 Tactical Computer Resources	<b>19.186</b>							
29076 Multi-Level Security For Network-Centric AN/UYQ-70	<b>3.344</b>	<b>2.909</b>						
29077/Complementary High Energy Laser ***	<b>6.813</b>							
<p><b>Defense Emergency Resonpses funds (DERF) : Not applicable.</b></p> <p>***Transferred to PE 0603582n (Battleforce Interoperability)</p> <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. Develop small and inexpensive inertial measurement system that will provide precision pointing control and instrumentation for a variety of Acquisition Tracking and Pointing (ATP) system applications with primary emphasis on laser weapons. Systems engineering to develop the requirements and specifications for laser targeting power and timing as part of the laser designation and weapon system. System engineering and analysis for the operational utilization concept and the complementary operational effectiveness of the combined laser system components with the defensive missile system and combat system. Systems engineering and analysis of Laser material interaction and Lethality.</p>								

R-1 SHOPPING LIST - Item No.

121

# UNCLASSIFIED

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 1 of 16)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCE			PROJECT NUMBER AND NAME; 21353/Standard Hardware, 29074/SUB Common Elect Equip 29075/Tactical Computer Resources, 29076/Multi-Level Security			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>31.783</b>	<b>15.803</b>	<b>2.267</b>	<b>2.456</b>	<b>2.548</b>	<b>3.060</b>	<b>3.107</b>	<b>3.157</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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. Develop small and inexpensive inertial measurement system that will provide precision pointing control and instrumentation for a variety of Acquisition Tracking and Pointing (ATP) system applications with primary emphasis on laser weapons. Systems engineering to develop the requirements and specifications for laser targeting power and timing as part of the laser designation and weapon system. System engineering and analysis for the operational utilization concept and the complementary operational effectiveness of the combined laser system components with the defensive missile system and combat system. Systems engineering and analysis of Laser material interaction and Lethality.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N/Navy Tactical Computer	PROJECT NUMBER AND NAME; 21353/Standard Hardware, 29074/SUB Common Elect Equip, 29075/Tactical Computer Resources, 29076/Multi-Level Security

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.956	4.532	0.796	0.863
RDT&E Articles Quantity				

Continue to perform intensive study and testing of COTS/OSA technology that adheres to standards.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.725	3.250	0.572	0.619
RDT&E Articles Quantity				

Continue to adapt these technologies and products to the Navy's tactical display/processor needs in the future.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.029	5.112	0.899	0.974
RDT&E Articles Quantity				

Contiue efforts to meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N/Navy Tactical Computer	PROJECT NUMBER AND NAME; 21353/Standard Hardware, 29074/SUB Common Elect Equip, 29075/Tactical Computer Resources, 29076/Multi-Level Security

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.543	0.000	0.000	0.000
RDT&E Articles Quantity				

FY 2002 Accomplishments: Continued development and qualifications of two new air-cooled AN/UYQ-70 variants, an auxiliary components enclosure (ACE) and auxiliary components display (ACED). Performed systems integrating activities in support of (ACE) and (ACED).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	19.186	0.000	0.000	0.000
RDT&E Articles Quantity				

Continued development and engineering support of the Secure Voice System (SVS) Advanced Development Models (ADM) and First Production Units (FPU) for the AN/UYQ-70 Program.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.344	2.909	0.000	0.000
RDT&E Articles Quantity				

FY 2002 Accomplishments: Continued development of a stateless, ultra thin client network solution that provides data separation and privacy over the network via NSA certified solution that supports secure voice, video, and data requirements of the war fighter.  
 FY 2003 Plan: Continue development of a stateless, ultra thin client network solution that provides data separation and privacy over the network via NSA certified solution that supports secure voice, video, and data requirements of the war fighter.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES	PROJECT NUMBER AND NAME; 21353/Standard Hardware, 29074/SUB Common Elect Equip, 29075/Tactical Computer Resources, 29076/Multi-Level Security			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		33.749	2.185	2.948	2.996
Current BES/President's Budget (FY04/05 OSD/OMB Controls)		31.783	15.803	2.267	2.456
Total Adjustments		-1.966	13.618	-0.681	-0.540
Summary of Adjustments					
Program Offsets		-0.164	0.000	-0.281	-0.050
SBIR		-0.720	0.000	0.000	0.000
Miscellaneous Pricing Adjustments		-1.082	-0.120	0.000	0.000
Business Reform		0.000	-0.065	0.000	0.000
Post Production R&D Continuation		0.000	0.000	-0.346	-0.433
AN/UYQ-70(V) System Technology Insertion		0.000	11.000	0.000	0.000
Multi-level Security for Network		0.000	2.975	0.000	0.000
Inflation Adjustment		0.000	-0.172	-0.054	-0.057
Subtotal		-1.966	13.618	-0.681	-0.540
N/A					
Technical:					
N/A					

R-1 SHOPPING LIST - Item No. 121

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES			PROJECT NUMBER AND NAME; 21353/Standard Hardware, 29074/SUB Common Elect Equip, 29075/Tactical Computer Resources, 29076/Multi-Level Security				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Other Program Funding Summary Related RDT&E										
PE 0603382N (ADV COMBAT SYS TECHNOLC	3.111	3.276	3.394	3.346	1.918	0.981	0.985	0.999		
PE 0603502N (SHALLOW WATER MCM)	137.208	148.356	140.731	101.076	91.843	92.314	82.709	92.37		
PE 0604518N (COOPERATIVE ENGAGE)	5.07	0	21.244	16.489	15.328	13.061	12.943	0		
PE 0604307N (AEGIS WEAPON SYS MODS)	320.187	340.426	205.733	208.048	217.746	217.286	230.8	206.056		
PE 0604366N (STD MSL IMP)	13.574	20.819	76.927	100.633	189.229	191.916	213.595	207.216		
PE 0604755N (SHIP SELF DEFENSE)	62.141	60.598	40.93	25.633	8.01	18.475	11.781	0		
PE 0604503N SSN-688/TRIDENT MOD	60.203	92.153	66.519	31.936	29.125	45.491	52.677	53.367		
PE 0604561N SSN-21 DEVELOPMENT	5.448	16.353	13.482	3.057	3.093	3.726	3.078	3.135		
PE 0604562N SUB TACT WARFARE SYS	37.209	25.089	32.238	35.67	40.631	54.696	56.482	57.436		
PE 0603502N (SHALLOW WATER MCM)	137.208	148.356	140.731	101.076	91.843	92.314	82.709	92.37		
<b>F. MAJOR PERFORMERS: **</b>										
N/A										
* Not required for Budget Activities 1,2,3, and 6										
** Required for DON and OSD submit only.										

R-1 SHOPPING LIST - Item No. 121

**UNCLASSIFIED**



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604574N / NAVY TACTICAL COMPUTER RESOURCES			21353 / Standard Hardware						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	195.5								195.500	
Ancillary Hardware Development	Various	Various	0.65								0.650	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various	63.435	11.304		1.407		1.525			77.671	
Training Development			1.000								1.000	
Licenses			1.000								1.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			261.585	11.304		1.407		1.525		0.000	275.821	
Remarks:												
Development Support											0.000	
Software Development	Various	Various	39.109								39.109	
Training Development			1.375								1.375	
Integrated Logistics Support			2.172								2.172	
Configuration Management			0.700								0.700	
Technical Data			1.138								1.138	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			44.494	0.000		0.000		0.000		0.000	44.494	
Remarks:												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604574N / NAVY TACTICAL COMPUTER RESOURCES			21353 / Standard Hardware						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	24.535	0.950		0.440		0.479		Continuing	Continuing	Continuing
Operational Test & Evaluation	Various	Various	16.888	0.640		0.420		0.452		Continuing	Continuing	Continuing
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			41.423	1.590		0.860		0.931		0.000	44.804	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			347.502	12.894		2.267		2.456		0.000	365.119	
Remarks:												

R-1 SHOPPING LIST - Item No. 121

**UNCLASSIFIED**



# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-05</b>	PROGRAM ELEMENT PE0604574 / NAVY TACTICAL COMPUTER RESOURCES				PROJ. NO & NAME: 21353 / St. Hdw, 29074/SUB Com Elec Eq. , 29075 Tactical Comp Res, 29076/Multi-Level Security			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	1Q-3Q							
System Design Review (SDR)	2Q							
Milestone II (MSII)	3Q							
Contract Preparation	3Q							
Software Specification Review (SSR)	4Q							
Preliminary Design Review (PDR)	4Q							
System Development		1Q-2Q						
Critical Design Review (CDR)		2Q						
Quality Design and Build		3Q-4Q	1Q-4Q					
Test Readiness Review (TRR)			1Q					
Developmental Testing (DT-IIA)			3Q-4Q	1Q				
Eng Dev Model (EDM) Radar Delivery - Lab			2Q-3Q					
Software Delivery 1XXSW			2Q-4Q	1Q				
Preproduction Readiness Review (PRR)			4Q					
EDM Radar Delivery - Flt Related			4Q	1Q-4Q				
Milestone C (MS C)				1Q				
Operational Testing (OT-IIA)				1Q				
Start Low-Rate Initial Production I (LRIP I)				2Q				
Software Delivery 2XXSW				1Q-4Q				
Developmental Testing (DT-IIB1)				1Q-4Q				
Developmental Testing (DT-IIB2)				4Q	1Q-3Q			
Start Low-Rate Initial Production II					1Q			
Operational Testing (OT-IIB)					3Q	1Q-2Q		
Developmental Testing (DT-IIC)					4Q	1Q-2Q		
Functional Configuration Audit (FCA)						1Q		
Low-Rate Initial Production I Delivery						2Q-4Q	1Q-2Q	
Technical Evaluation (TECHEVAL)						2Q-3Q		
Physical Configuration Audit						3Q		
Operational Evaluation (OT-IIC) (OPEVAL)							2Q-3Q	
Low-Rate Initial Production II Delivery							2Q-4Q	1Q-2Q
IOC								1Q
Full Rate Production (FRP) Decision								2Q
Full Rate Production Start								2Q
First Deployment								4Q

R-1 SHOPPING LIST - Item No. 121

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 10 of 16)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCE	PROJECT NUMBER AND NAME 29077/ Complementary High Energy Laser

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	<b>6.813</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Quantity				

**HIGH ENERGY LASER DEVELOPMENT**

FY 2002 Accomplishments: Developed small and inexpensive inertial measurement system that will provide precision pointing control and instrumentation for a variety of Acquisition Tracking and Pointing (ATP) system applications with primary emphasis on laser weapons. Performed systems engineering to develop the requirements and specifications for laser targeting power and timing as part of the laser designation and weapon system. System engineering and analysis for the operational utilization concept and the complementary operational effectiveness of the combined laser system components with the defensive missile system and combat system. Performed systems engineering and analysis of Laser material interaction and Lethality.

**FY 03 TRANSFERRED TO TO PE 0603582N (BATTLEFORCE INTEROPERABILITY)**

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N/Navy Tactical Computer	PROJECT NUMBER AND NAME 29077/ Complementary High Energy Laser

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	<b>6.813</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Quantity				

FY 2002 Accomplishments: Developed small and inexpensive inertial measurement system that will provide precision pointing control and instrumentation for a variety of Acquisition Tracking and Pointing (ATP) system applications with primary emphasis on laser weapons. Performed systems engineering to develop the requirements and specifications for laser targeting power and timing as part of the laser designation and weapon system. System engineering and analysis for the operational utilization concept and the complementary operational effectiveness of the combined laser system components with the defensive missile system and combat system. Performed systems engineering and analysis of Laser material interaction and Lethality.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES	PROJECT NUMBER AND NAME 29077/ Complementary High Energy Laser			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		5.947	0.000	0.000	0.000
Current BES/President's Budget (FY04/05 OSD/OMB Controls)		6.813			
Total Adjustments		0.866	0.000	0.000	0.000
Summary of Adjustments					
BTR		1.013			
SBIR/STTR Transfer		-0.118			
Misc. Adjustments		-0.029		0.000	0.000
Subtotal		0.866	0.000	0.000	0.000
Schedule:					
N/A					
Technical					
N/A					

R-1 SHOPPING LIST - Item No. 121

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**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2A, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604574N / NAVY TACTICAL COMPUTER RESOURCES	PROJECT NUMBER AND NAME 29077/ Complementary High Energy Laser
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Other Program Funding Summary										
Related RDT&E										
PE 0604755N SHIP SELF DEFENSE	62.141	60.598	40.93	25.633	8.01	18.475	11.781	0		
PE 0602114N POWER PROJECTION APPLIED RES (Office of Naval Research)	86.004	105.324	114.144	107.26	83.87	76.443	87.931	59.051		
PE 0603924D8Z HIGH ENERGY LASER ADVANCE DEVELOPMENT (Joint Technology Office)	13.431	13.567	13.702	13.908	14.13	14.37	14.615	14.878		
PE 0602890D8Z HIGH ENERGY LASER DEVELOPMENT (Joint Technology Office)	44.856	45.31	45.763	46.449	47.192	47.995	48.81	49.689		
PE 0601108D8Z HIGH ENERGY LASER INITIATIVE (Joint Technology Office)	11.961	12.082	12.202	12.385	12.584	12.797	13.015	13.249		
PE 0603582N COMBAT SYSTEM INTEGRATION/BATTLEFORCE INTEROPERABILITY	63.904	57.048	86.836	48.439	49.889	57.362	46.523	34.662		

**F. MAJOR PERFORMERS: \*\***

N/A

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

\*\* Required for DON and OSD submit only.

R-1 SHOPPING LIST - Item No. 121

**UNCLASSIFIED**



**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604574N Navy Tactical Computer			29077/ Complementary High Energy Laser						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Component Development			0.724							Continuing	Continuing	Continuing
Ship Integration												
Ship Suitability												
Systems Engineering			0.570							Continuing	Continuing	Continuing
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.294								1.294	
Remarks:												
Development Support			0.265							Continuing	Continuing	Continuing
Software Development			1.860							Continuing	Continuing	Continuing
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			2.125								2.125	
Remarks: Development of manufacturability of hemispherical Optical and sensor tracker. Evaluation of generic missile model for use in evaluating High Energy Laser plus missile safe ship defense. Software model development for laser material interactions. Software development and modification of ship defense capabilities model.												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604574N/ Navy Tactical Computer			29077/ Complementary High Energy Laser						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			3.180								3.180	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			3.180	0.000		0.000		0.000		0.000	3.180	
<p>Remarks: Remarks: Characteristic modeling and validation of polymeric composite materials in current or near-term missile radome materials and the effects of High energy Lasers on this material. Fabrication of representative material test samples of radome material. Missile seeker performance modeling to determine the drop lock RF attenuation level of different missile seekers as part of the laser lethality modeling against missile targets.</p>												
Contractor Engineering Support											0.000	
Government Engineering Support			0.214								0.214	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.214	0.000		0.000		0.000		0.000	0.214	
<p>Remarks: Characteristic modeling and validation of polymeric composite materials in current or near-term missile radome materials and the effects of High energy Lasers on this material. Fabrication of representative material test samples of radome material. Missile seeker performance modeling to determine the drop lock RF attenuation level of different missile seekers as part of the laser lethality modeling against missile targets.</p>												
Total Cost			6.813	0.000		0.000		0.000		0.000	6.813	
Remarks:												

R-1 SHOPPING LIST - Item No. 121

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 16 of 16)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE 0604601N, Mine Development					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	170.698	0.000	1.458	1.497	6.247	15.646	15.886	16.149	5.671	Continuing	Continuing
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		0
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
<p>This project is the only R&amp;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:</p> <p>(1a) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations;</p> <p>(1b) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms;</p> <p>(2) Developing and upgrading Tactical Decision Aids (TDAs) to assist the warfighter in planning and placing more effective minefields;</p> <p>(3) Designing and developing the 2010 Mine, which is a replacement for Underwater Mine MK 56. Mine MK 56 is designated to be removed from service by the year 2010. The 2010 Mine design will include provisions for future capability upgrades. Future upgrades might include (a) 2-way remote command &amp; control of the minefield, (b) precision standoff delivery from aircraft, (c) an enlarged target detection and damage radius, and (d) advanced power systems for the mine.</p>											

R-1 SHOPPING LIST - Item No. 122

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME Q0267, Mine Development

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.422	0.455	4.696
RDT&E Articles Quantity				

**Product Development:**

FY 2003 PLANS

- (\$0.422) System Engineering: Conduct Analysis of Alternatives for 2010 Mine Development.

FY 2004 PLANS

- (\$0.455) System Engineering: Draft requirements for 2010 Mine.

FY 2005 PLANS

- (\$4.210) Hardware Development: Initiate 2010 Mine design and development.
- (\$0.486) System Engineering: Initiate development of Concept of Operations and conduct other tactical analysis modeling and simulation in support of 2010 Mine development.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME Q0267, Mine Development

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.861	0.894	1.469
RDT&E Articles Quantity				

**Development Support:**

**FY 2003 PLANS**

- (\$0.811) Software Development: Develop target detection algorithms for diesel-electric mini-sub and MCM ships. Continue development of PC-based, MEDAL-compliant TDA for minefield
- (\$0.050) Integrated Logistic Support (ILS)

**FY 2004 PLANS**

- (\$0.844) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning.
- (\$0.050) Integrated Logistic Support (ILS)

**FY 2005 PLANS**

- (\$1.319) Software Development: Continue development of target detection algorithms and PC-based, MEDAL-compliant TDA for minefield planning.
- (\$0.150) Integrated Logistic Support (ILS)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME Q0267, Mine Development

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.175	0.148	0.082
RDT&E Articles Quantity				

**Management:**

FY 2003 PLANS

- (\$0.170) Program Management Support
- (\$0.005) Travel

FY 2004 PLANS

- (\$0.143) Program Management Support
- (\$0.005) Travel

FY 2005 PLANS

- (\$72.) Program Management Support
- (\$0.010) Travel

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME Q0267, Mine Development			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY03 President's Budget:		0.000	1.491	1.592	6.652
FY04 President's Budget		0.000	1.458	1.497	6.247
Total Adjustments		0.000	-0.033	-0.095	-0.405
Summary of Adjustments					
Misc Adjustments		0.000	-0.033	-0.095	-0.405
Subtotal					
		0.000	-0.033	-0.095	-0.405
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 122

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604601N, Mine Development	PROJECT NUMBER AND NAME Q0267, Mine Development
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Line 323100, WPN										
QS Mod 3	3.828	1.986	3.210	3.019	3.065	3.121	3.168	3.238	Continuing	Continuing
2010 Mine Replacement	0	0	0	0	0	0	0	10.702	Continuing	Continuing
Total	3.828	1.986	3.210	3.019	3.065	3.121	3.168	13.940	Continuing	Continuing

**(U) E. ACQUISITION STRATEGY:**

NSWC CSS Panama City FL is teamed with other Navy activities and various contractors to design and develop the 2010 Mine as a replacement for the Mine MK56. Procurement is scheduled to start in FY09

**(U) F. MAJOR PERFORMERS:**

- NSWC, CSS, Panama City, FLA: Design and develop the 2010 Mine as a replacement for the Mine MK56.



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604601N, Mine Development			Q0267, Mine Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RCP	NWSC, CSS	106.622					4.210	12/04	Cont.	Cont.	N/A
Ancillary Hardware Development			2.158								2.158	N/A
Ship Suitability	WR	NWSC, CSS	1.057	0.422	12/02	0.455	12/03	0.486	12/04	Cont.	Cont.	N/A
GFE			4.790								4.790	N/A
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			114.627	0.422		0.455		4.696		Cont.	120.200	
Remarks:												
Software Development	WR	Various	3.837	0.811	12/02	0.844	12/03	1.319	12/04	Cont.	Cont.	N/A
Integrated Logistics Support	WR	NWSC, CSS	0.220	0.050	12/02	0.050	12/03	0.150	12/04	Cont.	Cont.	N/A
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			4.057	0.861		0.894		1.469		0.000	7.281	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604601N, Mine Development			Q0267, Mine Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NWSC, CSS	15.833							Cont.	Cont.	N/A
Operational Test & Evaluation	WR	NWSC, CSS, COMOPTEVFOR								Cont.	Cont.	N/A
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			15.833	0.000		0.000		0.000		0.000	15.833	
Remarks:												
Government Engineering Support			35.599								35.599	N/A
Program Management Support	Various	Various	0.582	0.170	12/02	0.143	12/03	0.072	12/04	Cont.	Cont.	N/A
Travel	PD	NAVSEA		0.005	12/02	0.005	12/03	0.010	12/04	Cont.	Cont.	N/A
											0.000	
											0.000	
Subtotal Management			36.181	0.175		0.148		0.082		0.000	36.586	
Remarks:												
Total Cost			170.698	1.458		1.497		6.247		Cont.	179.900	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp; E, N/BA-5</b> E. Schedule Profile	PROGRAM ELEMENT 0604601N, Mine Development	R-1 ITEM NOMENCLATURE 0604601N, Mine Development

## MINE DEVELOPMENTS PROGRAM SCHEDULE

	FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007				FY 2008				FY 2009			
	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																																
TDA Design/Development																																
TDA Verification/Validation																																
Algorithm Design/Development																																
Algorithm Verification/Validation																																
2010 Mine Analysis of Alternatives																																
2010 Mine Requirements Analysis and Documentation																																
2010 Mine Design/Development																																
2010 Mine Production																																

R-1 SHOPPING LIST - Item No. 122

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>	PROGRAM ELEMENT 0604601N, Mine Development				PROJECT NUMBER AND NAME Q0267, Mine Development			
Schedule Profile: Mine Development	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
TDA Design/Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
TDA Verification/Validation		3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Algorithm Design/Development		1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Algorithm Verification/Validation			1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
2010 Mine Analysis of Alternatives (Milestone A)		1Q-4Q	1Q-4Q					
2010 Mine Req Analysis and Documentation (Milestone B)			1Q-4Q					
2010 Design/Development (Milestone C)				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
2010 Mine Production								1Q-4Q

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>				R-1 ITEM NOMENCLATURE 0604603N Air to Surface Munitions				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>16.773</b>	<b>13.697</b>	<b>9.701</b>					
A2183 SLAM-ER	<b>12.604</b>	<b>10.764</b>	<b>9.701</b>					
A9078 LIGHT DEFENDER PRECISION STRIKE MISS	<b>4.169</b>	<b>2.933</b>						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(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 systems consist of hardware and software upgrades to the missile, software upgrades to the F/A-18 aircraft, and software upgrades to the Joint Missile Planning System (JMPS).

(U) A9078/LIGHT DEFENDER PRECISION STRIKE MISSILE Description: This program has been initiated to integrate and adapt the existing Light Defender missile to 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A2183 SLAM-ER			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>12.604</b>	<b>10.764</b>	<b>9.701</b>					
RDT&E Articles Qty								

**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) 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 Automated Mission Planning System (TAMPS) and to migrate to the Joint Mission Planning System (JMPS). SLAM ER aircraft software integration efforts need to remain compatible with ongoing F/A-18 periodic software builds.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A2183 SLAM-ER

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	9.994	5.535	5.301	
RDT&E Articles Quantity				

Continue conversion of SLAM/SLAM-ER TAMPS MPM, and F/A-18 MPM into planning components of JMPS.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.610	5.229	4.400	
RDT&E Articles Quantity				

Continue Missile Flight Test and Evaluation to support JMPS evolutionary acquisition strategy; F/A-18 Software (17C, 19C).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>																																																																							
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A2183 SLAM-ER																																																																								
<p><b>(U) C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 35%;">(U) Funding:</th> <th style="text-align: right; width: 15%;">FY 2002</th> <th style="text-align: right; width: 15%;">FY 2003</th> <th style="text-align: right; width: 15%;">FY 2004</th> <th style="text-align: right; width: 15%;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget:</td> <td style="text-align: right;">12.776</td> <td style="text-align: right;">12.142</td> <td style="text-align: right;">12.137</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget:</td> <td style="text-align: right;">12.604</td> <td style="text-align: right;">10.764</td> <td style="text-align: right;">9.701</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">-0.172</td> <td style="text-align: right; border-top: 1px solid black;">-1.378</td> <td style="text-align: right; border-top: 1px solid black;">-2.436</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="5" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td colspan="5" style="padding-left: 20px;">Congressional program reductions</td> </tr> <tr> <td style="padding-left: 20px;">Congressional undistributed reductions</td> <td></td> <td style="text-align: right;">-0.064</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional rescissions</td> <td style="text-align: right;">-0.027</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">SBIR/STTR Transfer</td> <td style="text-align: right;">-0.256</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Economic Assumptions</td> <td style="text-align: right;">-0.035</td> <td style="text-align: right;">-0.185</td> <td style="text-align: right;">-0.309</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Reprogramming</td> <td style="text-align: right;">0.146</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Other Navy/OSD Adjustments</td> <td></td> <td style="text-align: right;">-1.129</td> <td style="text-align: right;">-2.127</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Congressional increases</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">Subtotal</td> <td style="text-align: right;">-0.172</td> <td style="text-align: right;">-1.378</td> <td style="text-align: right;">-2.436</td> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Schedule: Not applicable</p> <p style="margin-top: 40px;">(U) Technical: Not applicable</p>					(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005	Previous President's Budget:	12.776	12.142	12.137	0.000	Current BES/President's Budget:	12.604	10.764	9.701	0.000	Total Adjustments	-0.172	-1.378	-2.436	0.000	Summary of Adjustments					Congressional program reductions					Congressional undistributed reductions		-0.064			Congressional rescissions	-0.027				SBIR/STTR Transfer	-0.256				Economic Assumptions	-0.035	-0.185	-0.309		Reprogramming	0.146				Other Navy/OSD Adjustments		-1.129	-2.127		Congressional increases					Subtotal	-0.172	-1.378	-2.436	0.000
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005																																																																						
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Congressional increases																																																																										
Subtotal	-0.172	-1.378	-2.436	0.000																																																																						

R-1 SHOPPING LIST - Item No. 123

# UNCLASSIFIED



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
---	----------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A2183 SLAM-ER
---	--	--

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
223100 SLAM-ER	25.719	82.178	54.145	61.597	0	0	0	0	0	223.639
WPN SLAM-ER Spares	0.178	1.031	0.652	0.603	1.21	1.654	1.43	1.423	0	6.527

**(U) E. ACQUISITION STRATEGY: \***

This is a ACAT II program, post milestone C in full rate production with an approved Acquisition Plan.

**(U) F. MAJOR PERFORMERS: \*\***

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604603N Air to Surface Munitions			A2183 SLAM-ER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support												
Software Development	SS/CPIF	Boeing, Mo	140.488	7.022	11/02	6.564	Various				154.074	154.074
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses	Various	Various	47.005	0.400	Various	0.577	Various				47.982	
GFE												
Award Fees												
Subtotal Support			187.493	7.422		7.141		0.000		0.000	202.056	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-5</b>			0604603N Air to Surface Munitions			A2183 SLAM-ER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation	WX	NAWC-WD	31.370	2.275	Various	1.500	Various				35.145	
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			31.370	2.275		1.500		0.000		0.000	35.145	
Remarks:												
Contractor Engineering Support	C/FFP	Delex Corporation	1.161	0.067	08/03	0.060	08/04				1.288	1.288
Government Engineering Support	WX	TBD	0.400	0.940	Various	0.940	Various				2.280	
Program Management Support												
Travel	WX	NAWC-AD		0.060	Various	0.060	Various				0.120	
Transportation												
SBIR Assessment												
Subtotal Management			1.561	1.067		1.060		0.000		0.000	3.688	
Remarks:												
Total Cost			220.424	10.764		9.701		0.000		0.000	240.889	
Remarks:												





# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A9078 Light Defender Precision Strike Missile			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>4.169</b>	<b>2.933</b>						
RDT&E Articles Qty								

**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 are a Congressional add to pay for integration the initial risk reduction efforts to the missile.

R-1 SHOPPING LIST - Item No.

123

# UNCLASSIFIED

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 10 of 13)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /</b>	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A9078 Light Defender Precision Strike Missile

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.169	2.933		
RDT&E Articles Quantity				

Integrate booster system onto Light Defender Weapon.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions	PROJECT NUMBER AND NAME A9078 Light Defender Precision Strike Missile			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		4.262	0.000	0.000	0.000
Current BES/President's Budget:		4.169	2.933	0.000	0.000
Total Adjustments		-0.093	2.933	0.000	0.000
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.018		
Congressional rescissions		-0.009			
SBIR/STTR Tranfer		-0.072			
Economic Assumptions		-0.012	-0.049		
Reprogramming					
Congressional Increases			3.000		
Subtotal		-0.093	2.933		
(U) Schedule: Not applicable					
(U) Technical: Not applicable					

R-1 SHOPPING LIST - Item No. 123

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604603N Air to Surface Munitions			PROJECT NUMBER AND NAME A9078 Light Defender Precision Strike Missile					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										0
Related RDT&E,N: Not Applicable										
<b>(U) E. ACQUISITION STRATEGY: *</b>										
This is a non-ACAT program with no specific acquisition strategies.										
<b>(U) F. MAJOR PERFORMERS: **</b>										

R-1 SHOPPING LIST - Item No. 123

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>	R-1 ITEM NOMENCLATURE <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>
---	--

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>9.900</b>	<b>14.638</b>	<b>3.442</b>	<b>10.072</b>	<b>6.241</b>	<b>1.366</b>	<b>1.408</b>	<b>1.434</b>
Lightweight Torpedo / F2234	<b>9.900</b>	<b>11.705</b>	<b>3.442</b>	<b>10.072</b>	<b>6.241</b>	<b>1.366</b>	<b>1.408</b>	<b>1.434</b>
Lightweight/Heavyweight Baseline Commonality / F9239	<b>0.000</b>	<b>2.933</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Quantity of RDT&E Articles								

A. (U) Mission Description and Budget Item Justification:

Lightweight Torpedo / F2234: The program designs, integrates and tests the Lightweight Torpedo (LWT, MK54). The torpedo is comprised of hardware and software from the MK 46 Torpedo, MK50 Torpedo, and MK 48 ADCAP Torpedo. The Lightweight Torpedo provides performance improvements in shallow water, littoral, counter-measure environments. The Engineering Development Model (EDM) contract was awarded to Raytheon Systems Company (formerly Hughes Aircraft Company) in June 1996. The EDM contract has delivered twenty-one EDM units to support the in-water test program. The FY 2003 MK54 Test and Evaluation Congressional increase (\$4.2M) will support extended TECHEVAL and OPEVAL programs that incorporate additional in-water firings.

Lightweight/Heavyweight Baseline Commonality / F9231: FY 2003 Congressional increase of \$3M reduced to \$2.933M by undistributed reductions is to develop and test hardware and software design changes that would realign the lightweight and heavyweight torpedo hardware and software baselines to achieve greater commonality.

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 1 of 10)

**UNCLASSIFIED**

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
--	-------------------------------

APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>	R-1 ITEM NOMENCLATURE <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>
---	--

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
System Engineering	1.707	1.508	1.180	5.677
Software Development	1.252	1.639	0.916	0.579
Hardware Development	0.558	3.238	0.176	0.050
System Test & Evaluation	6.383	8.253	1.170	3.766
<b>TOTAL</b>	<b>9.900</b>	<b>14.638</b>	<b>3.442</b>	<b>10.072</b>

**FY 2002 ACCOMPLISHMENTS:**

- System Engineering: continued Lightweight torpedo system engineering efforts.
- Software Development: continued development of MK54 tactical and signal processing software.
- System Test & Evaluation: continued simulation and in-water developmental testing. Initiated technical evaluation test program (TECHEVAL).
- Hardware Development: continued development of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LWT.

**FY 2003 Plan:**

- System Engineering: continue Lightweight torpedo system engineering efforts
- Software Development: continue development of tactical and signal processing software to resolve testing issues.
- Hardware Development: continue development of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LWT.
- System test & Evaluation: continue simulation and in-water testing. Complete TECHEVAL and conduct operational in-water test program (OPEVAL).
- Initiate Lightweight/Heavyweight Baseline Commonality initiatives to better align lightweight and heavyweight torpedoes hardware and software baselines.

**FY 2004 Plan**

- System Engineering & Software Development: continue planning, systems and software engineering that would implement tactical improvements and transition candidate technologies into the LWT to address fleet requests and counter emerging threats.
- System Test & Evaluation: complete OPEVAL and conduct additional test and evaluation of LHT to address operational in-water test program results and support tactical improvement candidate selection.

**FY 2005 Plan**

- System Engineering & Software Development: continue planning, systems and software engineering that would implement tactical improvement, Vertical Launch ASROC integration and transition candidate technologies into the LHT to address fleet requests and counter emerging threats.
- System Test & Evaluation: conduct missile, fire control and vertical launching system integration testing.

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-2, RDT&E Budget Item Justification**  
(Exhibit R-2, page 2 of 10)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>		R-1 ITEM NOMENCLATURE <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>		
<b>C. PROGRAM CHANGE SUMMARY:</b>				
Funding:	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>
Previous President's Budget: (FY 03 Pres Controls)	10.219	7.769	3.630	1.566
Current BES/President's Budget: (FY04 President Controls)	9.900	14.638	3.442	10.072
Total Adjustments	-0.319	6.869	-0.188	8.506
Summary of Adjustments				
Congressional Add MK54 Test & Evaluation		4.200		
Congressional Add LWT/HWT Baseline Commonality		3.000		
MK 54 Integration into VLA				8.900
FY2002 SBIR (dtd 5-12-02)	-0.013			
Reprogrammings	-0.204	-0.088	-0.123	-0.190
Economic Assumptions	-0.080	-0.243	-0.065	-0.204
Congressional undistributed reductions	-0.022			
Subtotal	-0.319	6.869	-0.188	8.506
Schedule: Additional in-water firings were added to the MK54 testing program resulting in an extended OPEVAL and delay to MK54 IOC in FY04. Tactical improvements will incorporate continued in-water testing, software and systems engineering support to improve capability against future threats and associated tactics. Start MK54 LWT integration with the Vertical Launch ASROC (VLA) in FY05.				
Technical: Not applicable.				

R-1 SHOPPING LIST - Item No. 124

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 3 of 10)

**UNCLASSIFIED**

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-7</b>					R-1 ITEM NOMENCLATURE <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	
Torpedo MK 46 MODS / MK54 MODS 0 (WPN / PE 0204228N / BA3 / BLI 321500)	9.777	38.040	34.249	61.648	76.933	96.642	115.831	128.556	CONT.	
 <b>E. ACQUISITION STRATEGY:</b>										
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.										
 <b>F. MAJOR PERFORMERS:</b>										
NUWC, Newport: System, Software, and Hardware engineering development.										
NUWC, Keyport: MK 54 Torpedo preparation for in-water testing and safety and environmental engineering including Fleet Excercise Section and Automatic Test Equipment.										
NSWC Indian Head: Warhead Development for Lightweight/Heavyweight Baseline Commonality.										
Raytheon Systems Company: Hardware Development Lightweight/Heavyweight Baseline Commonality.										

R-1 SHOPPING LIST - Item No. 124

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

**UNCLASSIFIED**

(Exhibit R-2, page 4 of 10)

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E, N/BA-5</b>			<b>0604610N</b>			<b>Lightweight Torpedo / F2234</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NUWC Newport/Keyport	CONT.	0.305	10/02	0.176	10/03	0.050	10/04	CONT.	CONT.	N/A
Systems Engineering	WR	NUWC Newport/Keyport	CONT.	1.196	10/02	0.723	10/03	0.300	10/04	CONT.	CONT.	N/A
Systems Engineering	Various	Various						4.862	10/04	CONT.	CONT.	N/A
Systems Engineering	WR	NSWC Indian Head	0.209	0.000		0.000		0.000		N/A	N/A	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			CONT.	1.501		0.899		5.212		CONT.	CONT.	
Development Support Equipment												
Software Development	WR	NUWC Newport/Keyport	CONT.	1.639	10/02	0.916	10/03	0.579	10/04	CONT.	CONT.	N/A
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			CONT.	1.639		0.916		0.579		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-3, Project Cost Analysis**

**UNCLASSIFIED**

(Exhibit R-3, page 5 of 10)

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
<b>RDT&amp;E, N/BA-5</b>			<b>0604610N</b>				<b>Lightweight Torpedo / F2234</b>					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Evaluation	WR	COMOPTEVFOR	CONT.	0.899	10/02	0.400	10/03	0.075	10/04	CONT.	CONT.	N/A
	Various	Various						3.496	10/04	CONT.	CONT.	N/A
	WR	NUWC Newport/Keyport	CONT.	7.154	10/02	0.770	10/03	0.195	10/04	CONT.	CONT.	N/A
	WR	NAWC Patuxent River	0.692	0.000		0.000		0.000		N/A	N/A	N/A
	WR	ARL/PSU State College, PA	1.707	0.200		0.000		0.000		N/A	N/A	N/A
Subtotal T&E			CONT.	8.253		1.170		3.766		CONT.	CONT.	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	Various	Anteon	CONT.	0.183	MISC.	0.409	MISC.	0.404	MISC.	CONT.	CONT.	N/A
Travel			CONT.	0.030	MISC.	0.030	MISC.	0.030	MISC.	CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead			CONT.	0.099	MISC.	0.018	MISC.	0.081	MISC.	CONT.	CONT.	N/A
Subtotal Management			CONT.	0.312		0.457		0.515		CONT.	CONT.	
Remarks:												
Total Cost			CONT.	11.705		3.442		10.072		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-3, Project Cost Analysis**

**UNCLASSIFIED**

(Exhibit R-3, page 6 of 10)

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E, N/BA-5</b>			<b>0604610N</b>			<b>Lightweight/Heavyweight Baseline Commonality / F9239</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various	N/A	1.500	MISC.					1.500	1.500	N/A
Systems Engineering	WR	NUWC Newport/Keyport	N/A	0.683	03/03					N/A	N/A	N/A
Systems Engineering	WR	NSWC Indian Head	N/A	0.750	03/03					N/A	N/A	N/A
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			N/A	2.933								
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support												
Remarks:												

R-1 SHOPPING LIST - Item No. 124

Exhibit R-3, Project Cost Analysis

(Exhibit R-3, page 7 of 10)

UNCLASSIFIED



CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E, N/BA-5</b>			<b>0604610N</b>			<b>Lightweight Torpedo / F2234</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Evaluation												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management												
Remarks:												
Total Cost			N/A	2.933		0.000		0.000				
Remarks:												

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-3, Project Cost Analysis**

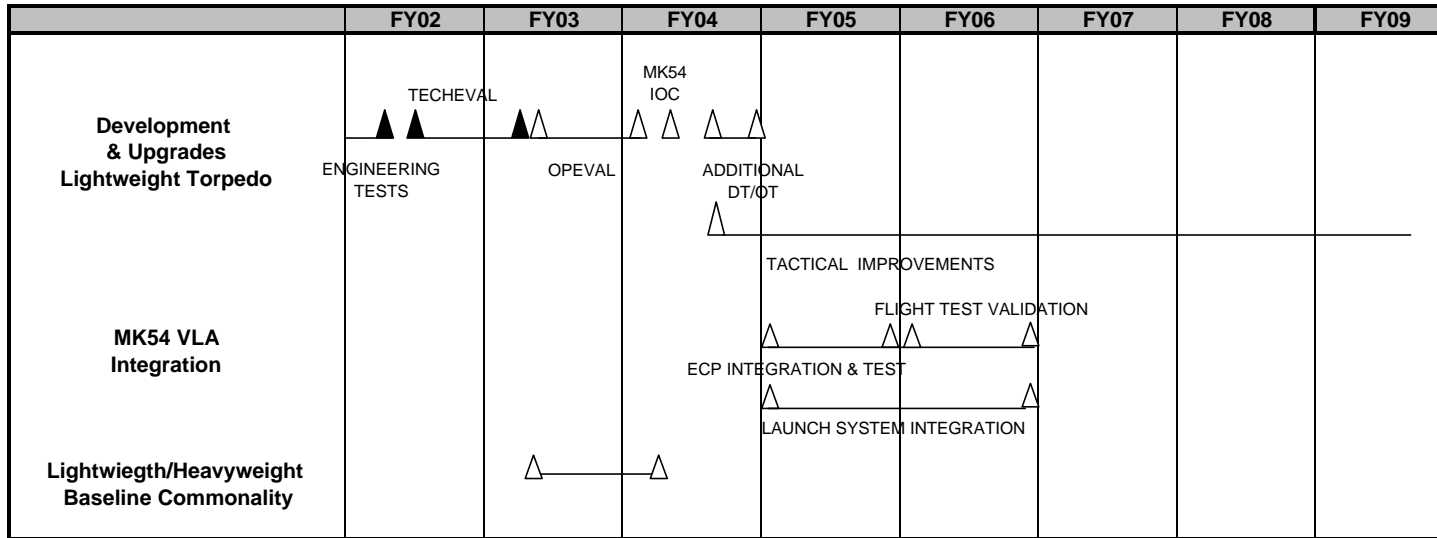
**UNCLASSIFIED**

(Exhibit R-3, page 8 of 10)

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-4, Schedule Profile	DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>	R-1 ITEM NOMENCLATURE <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>



R-1 SHOPPING LIST - Item No. 124

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

**UNCLASSIFIED**

(Exhibit R-2, page 9 of 10)

CLASSIFICATION:

**UNCLASSIFIED**

Exhibit R-4a, Schedule Detail					DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E,N/BA-5</b>	PROGRAM ELEMENT <b>0604610N</b>				PROJECT NUMBER AND NAME <b>LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N</b>			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Engineering Test	1Q							
TECHEVAL	2Q-4Q	1Q						
OPEVAL		2Q-4Q	2Q					
IOC			2Q					
Additional DT/OT			3Q-4Q					
Tactical Improvement			3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
VLA Integration & Test				1Q-4Q				
VLA Launch System Integration				1Q-4Q	1Q-4Q			
Flight Test Validation					1Q-4Q			
LWT/HWT Baseline Commonality Architecture Study		2Q-3Q						
LWT/HWT Baseline Commonality Contract Preparation		3Q-4Q						
LWT/HWT Baseline Commonality System Development		4Q	1Q					

R-1 SHOPPING LIST - Item No. 124

**Exhibit R-4a, RDT&E Budget Item Justification**  
(Exhibit R-4a, page 10 of 10)

**UNCLASSIFIED**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604618N; Joint Direct Attack Munition (JDAM)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>49.037</b>	<b>47.780</b>	<b>33.029</b>	<b>66.015</b>	<b>30.425</b>	<b>16.284</b>	<b>0.000</b>	<b>0.000</b>
A2137/Joint Direct Attack Munition	<b>49.037</b>	<b>47.780</b>	<b>33.029</b>	<b>66.015</b>	<b>30.425</b>	<b>16.284</b>	<b>0.000</b>	<b>0.000</b>

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(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. The program will incorporate commonality with the Joint Standoff Weapon where feasible.

The JDAM Joint Operational Requirements Document (JORD) was 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 smart rack for additional weapon carriage.

The Navy JDAM 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 PIP effort includes the development of a seeker Precision Guidance Set (PGS) which will be integrated with the JDAM tailkit and the F/A-18 aircraft with the Hornet Autonomous Real-time Targeting (HART) upgrade, capitalizing on the ATFLIR capabilities for reactive targeting.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)			PROJECT NUMBER AND NAME A2137/ Joint Direct Attack Munition (JDAM)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>49.037</b>	<b>47.780</b>	<b>33.029</b>	<b>66.015</b>	<b>30.425</b>	<b>16.284</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty	<b>35</b>	<b>5</b>	<b>12</b>	<b>93</b>				

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(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. The program will incorporate commonality with the Joint Standoff Weapon where feasible.

The JDAM Joint Operational Requirements Document (JORD) was 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 smart rack for additional weapon carriage.

The Navy JDAM 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 PIP effort includes the development of a seeker Precision Guidance Set (PGS) which will be integrated with the JDAM tailkit and the F/A-18 aircraft with the Hornet Autonomous Real-time Targeting (HART) upgrade, capitalizing on the ATFLIR capabilities for reactive targeting.

35 Guided Test Vehicles (GTVs) were procured in FY 2002 for MK82 testing. Test articles procured in FY 2003 - FY 2005 are Guided test Vehicles (GTVs) for the JDAM PIP/HART integration testing.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137/ Joint Direct Attack Munition (JDAM)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Complete JDAM MK83 testing and integration	2.779			
RDT&E Articles Quantity				

Completion of the end-to-end testing necessary to validate the JDAM MK83 performance within the Navy system, including operational testing on the F/A-18 C/D aircraft.

	FY 02	FY 03	FY 04	FY 05
JDAM MK82 Development & Integration	25.414	18.892		
RDT&E Articles Quantity	35			

Navy participation in the joint JDAM MK82 development program, including integration of the weapon within the Navy environment, integration with the F/A-18 aircraft and the smart rack, Joint Mission Planning System (JMPS) module updates, systems engineering support, ILS, training and fleet introduction. Conduct MK-82 developmental and operational testing. The costs include the engineering, technical and administrative support to accomplish this program.

	FY 02	FY 03	FY 04	FY 05
JDAM Product Improvement Program (PIP)	20.844	28.888	33.029	66.015
RDT&E Articles Quantity		5	12	93

JDAM PIP development, including development of a seeker Precision Guidance Set (PGS), F/A-18 C/D/E/F software development/integration/testing, JMPS module updates, test articles, contractor and government engineering systems support, development and operational testing and evaluation, ILS, training and fleet introduction. The costs include the engineering, technical and administrative support to accomplish this program.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137/ Joint Direct Attack Munition (JDAM)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		55.767	48.861	35.964	33.804
Current President's Budget		49.037	47.780	33.029	66.015
Total Adjustments		-6.730	-1.081	-2.935	32.211
Summary of Adjustments					
Congressional program reductions			-0.289		
Congressional undistributed reductions					
Congressional rescissions		-0.119			
SBIR/STTR Transfer		-1.285			
Economic Assumptions		-0.140	-0.792	-0.845	-1.438
Reprogrammings		-5.186			
SPONSOR/FMB/NAVAIR Adjustments				-2.090	33.649
Congressional increases					
Subtotal		-6.730	-1.081	-2.935	32.211
Schedule:					
The Previous President's Budget reflected the schedule and costs to integrate and test the PIP/HART on the F/A-18 E/F only. The current President's Budget adds PIP/HART DT F/A-18 C/D and PIP/HART FOTE F/A-18C/D to the schedule.					
Technical:					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137/ Joint Direct Attack Munition (JDAM)
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
PAN,MC/B.A.-1 Ammunition - JDAM	301.780	275.188	277.347	264.933	136.380	136.366	126.517	126.394		1810.019
DERF - JDAM	162.500									

**E. 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.



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPAF	Boeing, St. Louis, MO	10.489								10.489	10.489
Aircraft Integration	SS/CPAF	Boeing, St. Louis, MO	27.602	11.186	02/03	11.292	02/04	21.397	02/05	16.991	88.468	88.468
Award Fees	SS/CPAF	Boeing, St. Louis, MO	0.969								0.969	0.969
Test Assets	SS/CPAF	Boeing, St. Louis, MO	22.914	2.378	02/03	1.702	02/04	15.695	02/05		42.689	42.689
Systems Engineering	WX	NAWC-WD, China Lake, CA	59.840	10.230	11/02	3.811	11/03	9.483	11/04	7.125	90.489	
Subtotal Product Development			121.814	23.794		16.805		46.575		24.116	233.104	
Remarks:												
Development Support - Misc	Various	Various	5.312								5.312	
Software Development - OFP	WX	AWL/CL	25.558	17.870	12/02	7.939	12/03	9.799	12/04	12.597	73.763	
Software Development - Mission Planning	SS/CPAF	Raytheon, Tucson, AZ	8.477	0.677	12/02	1.335	12/03	1.323	12/04	0.294	12.106	12.106
Subtotal Support			39.347	18.547		9.274		11.122		12.891	91.181	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC/CL	26.022	2.849	12/02	5.223	10/03	6.156	10/04	1.205	41.455	
Operational Test & Evaluation	PD	OPTEVFOR, China Lake, CA	3.714	0.616	12/02					5.320	9.650	
Developmental Test & Evaluation - M	Various	Various	5.056								5.056	
Subtotal T&E			34.792	3.465		5.223		6.156		6.525	56.161	
Remarks:												
Contractor Engineering Support	Various	Various	13.968	1.261	12/02	1.317	10/03	1.803	10/04	2.578	20.927	
Travel	PD	JDAM	1.730	0.185	10/02	0.110	10/03	0.110	10/04	0.220	2.355	
Program Management Support	Various	Various	6.348	0.528	03/03	0.300	03/04	0.249	03/05	0.379	7.804	
SBIR Assessment												
Subtotal Management			22.046	1.974		1.727		2.162		3.177	31.086	
Remarks:												
Total Cost			217.999	47.780		33.029		66.015		46.709	411.532	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)								PROJECT NUMBER AND NAME A2137/ Joint Direct Attack Munition (JDAM)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>								★ IOC - MK83								★ IOC - MK82								★ IOC - PIP/HART								
MK82 EMD																																
PIP/HART Requirements Definition																																
PIP/HART SDD																																
<b>Test &amp; Evaluation Milestones</b>																																
MK82 CDR																																
MK83 Operational Test																																
MK82 Development Test																																
MK82 Operational Test																																
PIP/HART Development Test E/F																																
PIP/HART Development Test C/D																																
PIP/HART Operational Test E/F																																
PIP/HART FOT&E																																
<b>Production Milestones</b>																																
MK83 Prod Cut -in	▲																															
MK82 Prod Cut-in												△																				
PIP/HART LRIP																△																

R-1 SHOPPING LIST - Item No. 125

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



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>				R-1 ITEM NOMENCLATURE 0604654N Joint Service EOD Development Engineering							
										Total	
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Program
Total PE Cost		<b>7.810</b>	<b>7.609</b>	<b>8.136</b>	<b>8.113</b>	<b>10.679</b>	<b>11.276</b>	<b>10.104</b>	<b>10.771</b>	<b>Continuing</b>	<b>Continuing</b>
EOD Procedures/Q1829		<b>7.810</b>	<b>7.609</b>	<b>8.136</b>	<b>8.113</b>	<b>10.679</b>	<b>11.276</b>	<b>10.104</b>	<b>10.771</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>Continuing</b>	<b>0</b>

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

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).

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.

R-1 SHOPPING LIST - Item No.126

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604654N/Joint Service EOD Development Engineering	PROJECT NUMBER AND NAME Q1829/EOD Procedures
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.037	5.728	6.632	6.472
RDT&E Articles Quantity				

Obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.855	0.893	0.707	0.773
RDT&E Articles Quantity				

Develop IND countermeasures procedures and participate in exercises and joint working groups.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.918	0.988	0.797	0.868
RDT&E Articles Quantity				

Obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.

R-1 SHOPPING LIST - Item No.126

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604654N/Joint Service EOD Development Engineering	PROJECT NUMBER AND NAME Q1829/EOD Procedures		
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>				
	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 03 Pres Controls):	8.051	7.781	10.246	9.517
Current BES/President's Budget (FY 04 President Controls):	7.810	7.609	8.136	8.113
Total Adjustments	-0.241	-0.172	-2.110	-1.404
Summary of Adjustments				
Misc Adj	-0.241	-0.089	-2.110	-1.404
Subtotal	-0.241	-0.172	-2.110	-1.404
(U) Schedule: Not Applicable				
(U) Technical: Not Applicable				

R-1 SHOPPING LIST - Item No.126

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																								
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604654N/Joint Service EOD Development Engineering			<b>PROJECT NUMBER AND NAME</b> Q1829/EOD Procedures																									
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. &amp; Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></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 colspan="11" style="padding: 10px;">Not applicable</td> </tr> </tbody> </table>										Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost	Not applicable										
Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost																					
Not applicable																															
<p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>This is a non-acquisition program.</p>																															
<p><b>(U) F. MAJOR PERFORMERS: **</b></p> <p>The majority of funding in this line is executed by Naval Explosive Ordnance Disposal Technology Division located in Indian Head, MD in FY02 through FY05. The funding is used to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.</p>																															
<p>* Not required for Budget Activities 1,2,3, and 6                  ** Required for DON and OSD submit only.</p>																															

R-1 SHOPPING LIST - Item No.126

# UNCLASSIFIED



**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604654N/Joint Service EOD Development Engir			Q1829/EOD Procedures						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RSP Development	WR	EODTD, Indian Head, MD	140.301	4.765	10/02	5.475	10/03	5.456	10/04	Continuing	Continuing	
IND Countermeasures	WR	EODTD, Indian Head, MD	25.060	0.706	10/02	0.584	10/03	0.584	10/04	Continuing	Continuing	
Foreign Mine Acquisition	WR	EODTD, Indian Head, MD	3.493	0.822	10/02	0.657	10/03	0.657	10/04	Continuing	Continuing	
Program Management Personnel	WR	EODTD, Indian Head, MD	1.670	0.175	10/02	0.200	10/03	0.200	10/04	Continuing	Continuing	
Miscellaneous	Various	Various	4.713	1.141	10/02	1.220	10/03	1.216	10/04	Continuing	Continuing	
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
Subtotal Product Development			175.237	7.609		8.136		8.113		0.000	199.095	
Remarks:												
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
												0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604654N/Joint Service EOD Development Engineering			Q1829/EOD Procedures						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			175.237	7.609		8.136		8.113		0.000	199.095	
Remarks:												

R-1 SHOPPING LIST - Item No.126

# UNCLASSIFIED

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N PROJECT NUMBER: L1822  
PROGRAM ELEMENT TITLE: Manpower, Personnel, PROJECT TITLE: Manpower, Personnel,  
Training, Simulation, and Training, Simulation, and  
Item No. 127 Human Factors Human Factors

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TOTAL PROGRAM
L1822 Manpower, Personnel, Training, Simulation, and Human Factors	1,257	1,303	1,058	1,166	1,200	1,448	1,475	1,503	CONT.
W3089 Science and Technology Training Transition			883	1,017	1,100	1,161			
TOTAL	1,257	1,303	1,941	2,183	2,300	2,609	1,475	1,503	

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 2002 ACCOMPLISHMENTS - L1822

- (U) (\$280K) Completed prototype development of the Retention Monitoring System (RMS) in a web-based application and transitioned RMS to full operation at the end of FY 2002.
- (U) (\$205K) Completed development of ARGUS Sailor Surveillance System at the end of FY 2002.

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5	PROGRAM ELEMENT: 0604703N	PROJECT NUMBER: L1822
	PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Item No. 127	PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

- (U) (\$100K) Completed refinements of the Assignment Policy Management System (APMS) prototype model, which ensured transition of the model to an operational decision support tool, by the end of FY 2002.
- (U) (\$339K) Continued development of the Distribution 2000 (D2K) prototype system. Designed interactive web pages to access/update user's input to D2K model. Developed D2K interface with the Job Advertisement and Selection System (JASS). Began design of Distribution Monitoring System and Decision Support System. Completed D2K system documentation requirements. Began testing of D2K software.
- (U) (\$183K) Began 6.5 R&D transitioning of the results of a 6.3 R&D project entitled STEAR - Skill Assessment, Training, Evaluation, and Assistance for Recruiters. The 6.5 project will assess skill requirements of recruiters and available recruiter training to improve overall effectiveness of the field recruiter force. The project will determine how the use of technology can enhance recruiter productivity and improve the recruiter's quality of life. Assembled and validated Recruiter Assessment Battery (RAB).
- (U) (\$150K) Began 6.5 R&D transitioning and prototype development of an integrated system of models from a proof of concept demonstrated under the previously successful 6.3 R&D Strength Planning and Budget System Integration (STP/BSI) projects. The new system will address problems in managing enlisted strength planning and budget development and execution, as an integrated system for long and short term.

### 2. (U) FY 2003 PLAN - L1822

- (U) (\$326K) Complete testing and development of D2K database, the web application, D2K model refinements, as well as prototype development of the Decision Support System (DSS). A report that documents final D2K DSS test results will be written for the distribution community, as well as senior managers/executives.
- (U) (\$225K) Continue the STEAR (Skill Assessment, Training, Evaluation, and Assistance for Recruiters) project. Revise the Recruiter Assessment Battery (RAB) based on the results of data validation analyses. Begin pilot testing of web-based RAB by administering the assessment battery to field recruiters.
- (U) (\$250K) Continue 6.5 R&D transitioning of the Strength Planning and Budget System Integration (STP/BSI) project. Modify model reports to reflect strength and forecast loss and gain rates by gender. Develop data and forecasts for members of the Individuals Account (IA). Develop strength modeling for a

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

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
		Item No.	127		

generalized network approach. Develop business objects to provide more intelligent and sophisticated tools for strength planning. Develop computer based training for enlisted strength planners.

- (U) (\$150K) 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) (\$200K) Begin 6.5 R&D transitioning to operational use of Comprehensive Officer Force Management Environment models/system (CHROME) by developing a prototype that supports officer force management decision-making in N13/N1. CHROME will include an automated decision support model that identifies leading indicators of retention and develops a tracking mechanism to predict potential manpower trends. The decision support model will allow manual updates of leading indicators and provides a then current trend analysis for effectively monitoring and managing the well-being of the Officer Force.
- (U) (\$152K) Begin 6.5 R&D transitioning to operational use of Models of Navy Compensation and Personnel Behavior (ModCOMP) by developing a prototype that supports N13 Military Compensation decision-making. Develop a number of basic and fundamental models and elements of compensation; models and elements of compensation that consider the behavioral relationship between compensation and retention and attrition.

### 3. (U) FY 2004 PLAN - L1822

- (U) (\$218K) Complete STEAR (Skill Assessment, Training, Evaluation, and Assistance for Recruiters) project. Produce guidelines to the sponsor for instituting final version of RAB.
- (U) (\$200K) Continue 6.5 R&D transitioning of the Strength Planning and Budget System Integration (STP/BSI) project. Complete strength modeling and computer based training for enlisted strength planners. Develop ability to retrieve data from PERSMART.
- (U) (\$150K) Continue development of URL Officer Career Path Simulation prototype model. Implement Data Collection Plan for model use. Extend application of the model to Aviator Community. Develop input and

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5	PROGRAM ELEMENT: 0604703N	PROJECT NUMBER: L1822
	PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Item No. 127	PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

output reporting requirements and analyze data for full implementation. Map Submarine and Fleet Support Officer Career Milestones in preparation of extending model application to these communities in FY 2005.

- (U) (\$190K) Continue 6.5 R&D transitioning to operational use of Comprehensive Officer Force Management Environment models/system (CHROME). Compare Strength Planner and Officer Community Manager forecasts and actual data. Develop capability to allocate officer accessions within the model platform. Develop capability to plan officer promotions within model platform. Develop capability to predict out-year officer strength losses. Develop capability to account for external variables that influence changes to the officer force. Incorporate pay-grade changes that occur with actual losses and add graphical output.
- (U) (\$150K) Continue 6.5 R&D transitioning to operational use of Models of Navy Compensation and Personnel Behavior (ModCOMP).
- (U) (\$ 50K) Begin 6.5 R&D transitioning of Training Continuum and Readiness Modeling (TCARM) system to operational use by developing a prototype that supports N13, NPC-4, and NETC training quota control and personnel management of assignment/reassignment actions involving en-route training. Capitalize on prior 6.3 R&D proof of concept modeling efforts.
- (U) (\$100K) Begin 6.5 R&D transitioning to operational use of Rating Identification Engine (RIDE). Demonstrate Skill-Job Matching Algorithm known as RIDE; a broad spectrum assignment algorithm that optimally assigns individuals to jobs, increasing job options for recruits while reducing training attrition, increasing first-pass A-school success, and maximizing average school and job performance.

### 3. (U) FY 2004 PLAN - W3089:

- (U) (\$200K) Develop prototype tools and technologies for real-time performance assessment and scenario redesign. The purpose of this program is to leverage work done on intelligent agents and authoring tool projects to produce prototype products that will support a Battle Group or Joint training staff and training audience with electronic performance support for human performance assessment and scenario redesign in the Battle Group or Joint training environment. Prototype capability would support the Fleet in the rapid authoring of various types of human performance metrics to be used in training individuals and

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5	PROGRAM ELEMENT: 0604703N	PROJECT NUMBER: L1822
	PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Item No. 127	PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

teams while deployed. The measurement of human performance is a cornerstone capability to achieve a revolution in training.

- (U) (\$215K) Develop prototype low-cost COTS/GOTS simulation systems to improved, collective/team training, mission planning and mission rehearsal. The program would leverage work done on micro-simulator systems, interoperability using the high level architecture (HLA), team dimensional training, to increase participant access to and training capacity of existing distributed simulation networks. The tradeoffs between physical, functional and environmental fidelity of low-cost and training capability have not been well defined although evidence clearly suggests positive transfer of training from use of low-cost simulation systems for individuals and teams. With reconfiguration low-cost "microsimulator" devices costing less than 5% of a medium fidelity device, many individual and team tasks can be trained earlier, more frequently, and with less skill perishability.
- (U) (\$468K) Develop prototype E-learning mentoring, tutoring and performance support design strategies and tools and develop prototype model and capability in E-learning environments. The strategies used for authoring content for reuse are markedly different than traditional methods for authoring and deploying content. This prototype effort would integrate current E-learning technologies including content packaging best practices for reusable learning content, learning management systems, authoring tools, knowledge management tools, synchronous and asynchronous communications technology and provide a capability to test alternative curriculum design, development and deployment strategies. The result of this effort would be used to develop future development guidelines and standards so that publications, technical data, training data, and learning assets could be authored once and reused in a variety of delivery modes (hand-held computer, web-based, CD-ROM, print, job performance aids, etc) to support instructor led training in both classroom and web environments, stand alone web-based or CD-ROM based training, performance support for the Sailor at the deckplate, and integration of mentoring tools and techniques for career development. The program would leverage work done on microsimulator systems, interoperability using the high level architecture (HLA), team dimensional training, and human performance measurement to provide very low-cost (<\$100K per unit) part task devices to increase participant access to and training capacity of existing distributed simulation networks.

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## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

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
		Item No.	127		

### 4. (U) FY 2005 PLAN - L1822

- (U) (\$ 80K) Complete prototype development of the models for the Strength Planning and Budget System Integration (STP/BSI) project and implement system enhancements, as required.
- (U) (\$186K) Complete prototype development of URL Officer Career Path Simulation model. Finalize input and output reporting requirements and prepare for full implementation. Extend application of the model to Submarine and Fleet Support Officer Communities. Validate the model across all URL communities.
- (U) (\$215K) Complete prototype development of Comprehensive Officer Force Management Environment models/system (CHROME) that supports N13 officer force management decision-making. Support model implementation and training. Finalize and standardize programs and data generation processes. Develop a Technical Report to report findings and transition into full operation.
- (U) (\$200K) Complete prototype development of the Models of Navy Compensation and Personnel Behavior (ModCOMP).
- (U) (\$75K) Continue 6.5 R&D 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.
- (U) (\$260K) Continue 6.5 R&D transitioning to operational use of Rating Identification Engine (RIDE). Demonstrate Skill-Job Matching Algorithm known as RIDE; a broad spectrum assignment algorithm that optimally assigns individuals to jobs, increasing job options for recruits while reducing training attrition, increasing first-pass A-school success, and maximizing average school and job performance.
- (U) (\$150K) 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. Demonstrate the feasibility of a personnel decision support system that exploits advanced technology for intelligent monitoring of personnel data and cross-functional evaluation of alternative policy scenarios. Integrate disparate data into an information conduit that provides timely and accurate officer and



# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604703N PROJECT NUMBER: L1822  
PROGRAM ELEMENT TITLE: Manpower, Personnel, PROJECT TITLE: Manpower, Personnel,  
Training, Simulation, and Training, Simulation, and  
Item No. 127 Human Factors Human Factors

enlisted personnel information to populate current and future manpower and personnel decision support systems. Demonstrate accurate retrieval and integration of data into standardized information windows.

(U) FY 2005 PLAN - W3089:

(U) (\$265K) Continue develop prototype tools and technologies for real-time performance assessment and scenario redesign.

(U) (\$275K) Continue prototype low-cost COTS/GOTS simulation systems to improved, collective/team training, mission planning and mission rehearsal.

(U) (\$477K) Continue prototype E-learning mentoring, tutoring and performance support design strategies and tools and develop prototype model and capability in E-learning environments.

B. (U) PROGRAM CHANGE SUMMARY:	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) FY 2004/2005 DoN/OSD Budget:	1,300	1,331	1,376	1,421
(U) Adjustments from DoN/OSD Budget:	-43	-28	+565	+762
(U) FY 2004/2005 President's Budget:	1,257	1,303	1,941	2,183

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 2002 funding adjustment of -43K consists of -26K BTR and miscellaneous cuts totaling -17K. FY 2003 adjustment of -28K consists of mostly cuts for Inflation Savings (-14K), Economic Savings (-7K), and Business Process Reform (-5K). Another -2K cut is for a reduction in IT Cost Growth. FY 2004 program adjustments +1,015; programmatic adjustments of -369K; inflation adjustment - - \$81K. FY 2005 program adjustments; +\$1,060; programmatic adjustments of -298K consists of funding realignment of (-251K) and inflation adjustment of -\$47K.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

# UNCLASSIFIED

## DoN FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 5	PROGRAM ELEMENT: 0604703N	PROJECT NUMBER: L1822
	PROGRAM ELEMENT TITLE: Manpower, Personnel, Training, Simulation, and Item No. 127	PROJECT TITLE: Manpower, Personnel, Training, Simulation, and Human Factors

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.

**UNCLASSIFIED**

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R0371 Energy Conservation (ENG)	3,030	5,566	-	-	-	-	-	-
R9241 Congressional Plus-Up	-	1,223	-	-	-	-	-	-
Total	3,030	6,789	-	-	-	-	-	-

A. 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 Legislative, 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.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: February 2003

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

B. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget Submission:	3,129	5,691	5,804	5,956
Adjustments from FY 2003 President's Budget:				
Program Termination			-5,804	-5,956
Congressional Plus-Up		1,250		
FY2002 SBIR	-23			
Cong. Rescissions/Adjustments/Undist. Reductions	-15	-79		
Execution Adjustment	-61			
Pay Raise/Inflation Adjustments		-73		
FY 2004/2005 President's Budget Submission:	3,030	6,789	-	-

PROGRAM CHANGE SUMMARY EXPLANATION:

Schedule: Not applicable  
Technical: Program terminates in FY04.

**UNCLASSIFIED**

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

Project Number: R0371  
Project Title: Energy  
Conservation (ENG)

COST: (Dollars in Thousands)

PROJECT NUMBER/ TITLE	FY 2002 ACTUAL	FY2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE
R0371 Energy Conservation (ENG)	3,030	5,566	-	-	-	-	-	-

A. 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 Legislative, 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.

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 02	FY 03	FY 04	FY 05
Shipboard Energy Conservation	657	612	-	-

This effort improves the energy efficiency of Navy ships through development and Test and Evaluation (T&E) of more efficient machinery and electrical systems.

FY 2002 ACCOMPLISHMENTS:

- Initiated design and installation of lightpipe lighting systems for at-sea T&E in hangar bays and well decks.
- Completed design, fabrication and T&E of an improved naval lighting fixture utilizing T5 fluorescent lamps.
- Initiated at-sea T&E of on-line gas turbine engine waterwash system.

FY 2003 PLANS:

- Complete at-sea T&E of lightpipe lighting systems in hangar bays and well decks.
- Complete at-sea T&E of an on-line gas turbine engine waterwash system.

# UNCLASSIFIED

FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

Project Number: R0371  
Project Title: Energy  
Conservation (ENG)

FY 2004 PLANS: Not applicable

FY 2005 PLANS: Not applicable

	FY 02	FY 03	FY 04	FY 05
Aircraft Energy Conservation	500	700	-	-

This effort reduces the fuel consumption of Navy and Marine Corps aircraft by developing flight planning software that optimizes fuel efficiency.

#### FY 2002 ACCOMPLISHMENTS:

- Continued software development of the Wings database engine.
- Completed converting Flight Optimization Routines for Energy Management (FOREM) aircraft performance computer models to the Wings database.
- Initiated development of new Naval aircraft performance models using the Wings database engine.
- Initiated development of Portable Flight Performance System (PFPS)/Wings interface software such that the Wings database models are compatible with the PFPS software.

#### FY 2003 PLANS:

- Complete software development of the Wings database engine.
- Complete development of nine new Naval aircraft performance models using the Wings database engine.
- Complete development of PFPS/Wings interface software such that the Wings database models are compatible with the PFPS software.

FY 2004 PLANS: Not applicable

FY 2005 PLANS: Not applicable

	FY 02	FY 03	FY 04	FY 05
Alternative and Renewable Energy Systems	1,873	4,254	-	-

This effort improves Department of the Navy energy security and reduces energy costs through the design assembly and testing of prototypes advanced alternative and renewable energy systems to determine their suitability for application at Navy and Marine Corps shore installations.

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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

Project Number: R0371  
Project Title: Energy  
Conservation (ENG)

## FY 2002 ACCOMPLISHMENTS:

- Completed commissioning of a grid connected system using advanced thin-film photovoltaic (PV) modules.
- Continued site specific design and support of PV/Diesel hybrid power systems.
- Designed and assembled prototype PV/flywheel and PV/fuel cell hybrid power systems to investigate advanced energy storage technologies.
- Continued development and demonstration of high efficiency, low emissions power generation system.

## FY 2003 PLANS:

- Complete site specific design and support of PV/Diesel hybrid power systems.
- Complete assembly and T&E of prototype PV/flywheel and PV/fuel cell hybrid power systems.
- Complete development and demonstration of high efficiency, low emissions power generation system.

## C. OTHER PROGRAM FUNDING SUMMARY:

### NAVY RELATED RDT&E:

PE 0601153N (Defense Research Sciences)  
PE 0603513N (Shipboard Systems Concept Development)  
PE 0603573N (Advanced Surface Machinery Systems)  
PE 0603721N (Environmental Protection)  
PE 0603724N (Navy Energy Program (ADV))  
PE 0604231N (Tactical Command Systems)

NON-NAVY RELATED RDT&E: Not applicable

D. ACQUISITION STRATEGY: Not applicable

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FY 2004/2005 RDT&E,N PROGRAM ELEMENT/PROJECT COST BREAKDOWN  
Exhibit R-3

DATE: February 2003

BUDGET ACTIVITY: 4      PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

Project Number: R0371  
Project Title: Energy  
Conservation (ENG)

A. PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Engineering Development & Testing	3,030	5,566	-	-



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FY 2004/2005 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2a

DATE: February 2003

BUDGET ACTIVITY: 5      PROGRAM ELEMENT: 0604710N  
PROGRAM ELEMENT TITLE: Navy Energy Program

Project Number: R9241  
Project Title: Photovoltaic  
Energy Park

Congressional Plus-Ups:

R9241	FY 02	FY 03
Photovoltaic Energy Park	N/A	1,223

Plan, design and establish an energy park to demonstrate solar and other renewable energy technologies.

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EXHIBIT R4, Schedule Profile																									DATE:										
<b>Not Applicable</b>																									<b>February 2003</b>										
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
<b>1319/BA 4</b>												0604710N - Navy Energy Program												R0371 - Energy Conservation (ENG)											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	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			

R-1 Line Item No. 128

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

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EXHIBIT R4, Schedule Profile																									DATE:							
<b>Not Applicable</b>																									February 2003							
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME												
1319/BA 4												0604710N - Navy Energy Program								R9241 - Photovoltaic Energy Park												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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

R-1 Line Item No. 128

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

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE PE 0604721N SHIPBOARD INFORMATION WARFARE EXPLOIT SYSTEM					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	29.982	9.310	17.077	16.942	18.078	18.799	16.102	16.407	16.715	Continuing	Continuing
X2134/SHIPBOARD IW EXPLOIT	29.982	9.310	13.752	16.942	18.078	18.799	16.102	16.407	16.715	Continuing	Continuing
X9242/COBLU DIGITAL UPGRADE	0.000	0.000	3.325	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.325
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p><b>Note:</b> Project X2135 has been incorporated into Project X2134 beginning in FY 02. Received Congressional Plus Up in FY02 of \$2,478K for the CDL-N program. Received Congressional Plus Up in FY03 of \$3,325K for the COBLU program.</p> <p><b>U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                      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 Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed SIGINT/COMINT and imagery. FY 03 Congressional Plus-up supports the Cooperative Outboard Logistics Update (COBLU), the Program of Record provides Comprehensive Surface Tactical (CESM) capability. These systems provide the Battle Group with real time Indications and Warnings (I&amp;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.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>                      This program is funded under BA-5, ENGINEERING &amp; 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. 129

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>29.982</b>	<b>9.310</b>	<b>13.752</b>	<b>16.942</b>	<b>18.078</b>	<b>18.799</b>	<b>16.102</b>	<b>16.407</b>	<b>16.715</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											<b>0</b>
<p><b>Note: Received Congressional Plus Up in FY02 of \$2,478K for the CDL-N program. Project X2135 has been incorporated into Project X2134 beginning in FY 02.</b></p> <p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                      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 Program of Record that implements the DoD mandated use of the Common Data Link waveform to downlink un-processed SIGINT/COMINT and imagery. FY 03 Congressional Plus-up supports the Cooperative Outboard Logistics Update (COBLU) , the Program of Record provides Comprehensive Surface Tactical (CESM) capability. These systems provide the Battle Group with real time Indications and Warnings (I &amp; 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.</p>											

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.609	2.472	4.000	4.000
RDT&E Articles Quantity				

Common Data Link- Navy (CDL-N)

FY02 - Initiated design and development of CDL-N integrated operator station and Intelligence, Surveillance and Reconnaissance (ISR) processing systems. Continued 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. Initiated development of the advance technology CDL modem.

FY03 - Continue development and integration of advanced technology CDL modem, design and development of CDL-N Block 1 integrated operator station and development efforts for interoperability and integration with emerging Navy sensor systems such as VTUAV, F/A-18 SHARP and EP-3E Multi-int systems.

FY04 - Integrate advanced technology CDL modem. Continue design and development of CDL-N Block 1 integrated operator station, development efforts for interoperability and integration with emerging Navy sensor systems such as BAMS, F/A-18 SHARP and EP-3E Multi-int systems.

FY05 - Integrate and Test Cooperative Antenna Program EDM Panels. Design and development of CDL-N Block 2 Advanced Technology Insertion and development efforts for interoperability and integration with emerging Navy sensor systems such as BAMS, F/A-18 SHARP and EP-3E Multi-int systems.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.569	0.500	1.500	2.500
RDT&E Articles Quantity				

**Cryptologic On-Line Trainer (COLT)**  
 FY02 - COLT supported Combat DF (CDF), Ships Signals Exploitation Equipment (SSEE), and Cooperative Outboard, Logistic Update (COBLU). Modified COLT server for Shipboard IW programs to include expansion of Signals of Interest (SOI), simulations and support for Wide Area Network (WAN) training. Integrated with latest release/update of CUB software.  
 FY03 - Continue to expand and modify the COLT server for Shipboard IW programs and integration with CUB 4.X software releases. Upgrade COLT client application functionality (SSEE Inc E, COBLU Phase 1, and CDF) to include additional SOI's and other emergent requirements.  
 FY04 - Modify COLT server in support of integration with CUB 5.X software releases. Upgrade COLT client application functionality (SSEE Inc E, COBLU Phase 1, and CDF) to include additional SOI's and other emergent requirements. Begin COLT integration with Battle Force Tactical Training (BFTT) system.  
 FY05 - Continue modifications and improvements to COLT server in support of CUB 5.X integration. Upgrade existing COLT client applications (SSEE Inc E, COBLU Phase 1, and CDF). Begin development of COLT SSEE Inc F and P3I requirements. Continue COLT BFTT integration development. Begin COLT automated performance monitoring/assessment functionality development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.925	1.750	1.000	1.000
RDT&E Articles Quantity				

**Cryptologic Unified Build (CUB)**  
 FY02 - Initiated development of 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. Integrated Defense Messaging System, DMS, software/upgrades into CUB baseline and tested.  
 FY03 - Continue development of CUB software to incorporate latest DII COE releases/updates for interoperability of Shipboard IW programs. CUB software is utilized on all Shipboard IW programs and is the DII COE 4.X baseline effort. Continue development of CUB on-line tutorial software, CUBOLT, software. Initiate development of Blue Forces IW database.  
 FY04 - Initiate development of CUB software to incorporate latest DII COE. CUB ensures interoperability between Sensor Systems and C4I systems. This development effort targets the DII COE 5.X baseline.  
 FY05 - Continue development and integration of CUB software to incorporate DII COE 5.X baseline. This development effort completes the DII COE 5.X baseline. Continue development of CUB On-Line Tutorial, CUBOLT, software.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	5.000	4.100
RDT&E Articles Quantity				

Multi-Mission Payload (MMP)  
 FY04 - Initiate System Development Phase of the remotely controlled platform independent MMP, intended for use as a pod on ship based aircraft. Award contracts for research and development of Engineering Development Models, EDMs. Conduct design review and perform end-to-end system engineering analysis. Perform aircraft data analysis and perform integration planning to develop the appropriate engineering design of the payload and its mechanical, electrical and environmental interface components. Determine design and interfaces of the data link equipment, which will be part of or co-located with the MMP to carry the command, control, and data exchange signals.  
 FY05 - Complete development of the EDMs pod and conduct laboratory acceptance tests. Develop Test Plan. Perform planning for, and make arrangements for, flight certification tests and evaluations. Plan for and obtain the Office of Naval Intelligence, ONI, certification and accreditation for Interim Authority To Operate, IATO. Perform the testing of EDM MMP pods on the aircraft, including flight certifications tests, after aircraft integration.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.662	5.050	2.000	2.500
RDT&E Articles Quantity				

Ship Signal Exploitation Equipment, Increment E  
 FY02 - Initiated development of SSEE Increment E Engineering Development Model, EDM, which included development and operational testing. This effort is focused on developing state-of-the-art Electronic Support Measures/Signal Intelligence, ESM/SIGINT, attributes into surface Shipboard IW programs.  
 FY03 - Initiate P31 development and testing of SSEE Increment E upgrades. Upgrade includes incorporation of latest CUB release and expansion of Signal of Interest, SOI, database. Initiate special/modern signal collection and processing development.  
 FY04 - Initiate P31 development of Command and Control software portion of the Hostile force Integrated Targeting Sub-system, HITS, and Time/Frequency Difference of Arrival functions into SSEE Incr E.  
 FY05 - Continue with effort to improve Command and Control software portion of the HITS in SSEE Incr E. Continue to expand SOI processing capability to priority signal sets. Fully test improved software.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X2134/SHIPBOARD IW EXPLOIT

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.980	1.792	1.618
RDT&E Articles Quantity				

**Specific Emitter Identification (SEI)**

FY03 - Initiate development of improved Specific Emitter Identification, SEI, software by independent test and evaluation, and begin retooling existing prototypes into a single platform. Conduct testing with SEI collection hardware and software. Initiate expansion of Navy's SEI data dissemination and management architecture. Facilitate the tactical employment of Navy SEI by addressing various operational issues. Continue development, testing, and documentation of SEI software enhancements in GCCS-M (CORRUS), GALE-LITE (SEI-GALE), and other fielded systems.

FY04 - Conduct independent test and evaluation and compatibility testing of SEI software and begin retooling existing prototypes into a single platform, Phase II. Formalize Navy SEI data standards for improved collection and dissemination. Begin integration of SEI capabilities into the Naval single platform distributed surface EW system. Continue to expand SEI database access, dissemination, and integration within the Theater Correlation Functions, TCFs, and tactical users. Continue to address SEI software operational issues to facilitate SEI tactical employment. Continue SEI software enhancements in GCCS-M (CORRUS), GALE-LITE, and other fielded systems.

FY05 - Continue to improve SEI software Phase III to support additional tactical installations, surface combatants, and airborne platforms. Enhance the exchange of Navy SEI data. Begin incorporation of future SEI algorithms corresponding to the next generation of multi-mission combatants and changing target sets. Continue incorporation of SEI into the overall Navy EW architecture for enhanced correlation and integration into Navy single platform distributed EW systems, to include surface, subsurface, and airborne.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.545	2.000	1.650	2.360
RDT&E Articles Quantity				

**Antenna & RF Distribution**

FY02 - Initiated development of capturing Non-Line-of-Sight High Frequency, HF, signals.

FY03 - 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, SOI, and increase both shipboard and operational environment interference.

FY04 - Implement design goals and objectives for existing antenna and future antenna efforts via requirements analysis. Complete development of existing antenna upgrades for enhanced capability. Initiate prototype demonstration effort for future antenna design for low signature DF and acquisition/enhanced capability and initiation of shipboard EDM plans.

FY05 - Update requirements analysis to maintain growing Signals of Interest, SOI, threat capability support via system RFD unit and future antenna upgrades. Complete development of future antenna for low signature DF and acquisition/enhanced performance.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	8.130	14.070		
Current BES/President's Budget	9.310	17.077	16.942	18.078
Total Adjustments	1.180	3.007	0.000	0.000

Summary of Adjustments

Miscellaneous Navy Adjustments	-1.129	-0.185		
Section 8123: Management Reform Initiative	-0.085	0.000		
Congressional Increase	2.500	3.400		
SBIR/STTR Transfer	-0.058	0.000		
Sec. 313, PL 107-206: Revised Economic Assumption	-0.022	0.000		
Economic Assumptions (SEC 8135)	-0.026	-0.098		
Business Process Reform (SEC. 8100)	0.000	-0.070		
IT Cost Growth	0.000	-0.032		
FY03 FFRDC reduction Sec. 8029, P.L. 107-248	0.000	-0.008		
Subtotal	1.180	3.007	0.000	0.000

(U) Schedule:

Not Applicable

(U) Technical:

Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604721N / SHIPBOARD IW EXPLOIT SYSTEM			PROJECT NUMBER AND NAME X2134 / SHIPBOARD IW EXPLOIT				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost
OPN Line 2360	54.325	85.235	123.267	69.106	72.538	76.743	78.164	79.608	Continuing	Continuing
DERF line 2360	3.480									
Related RDT&E, PE 0305885G										
<b>(U) E. ACQUISITION STRATEGY:</b>										
Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to SSC-Charleston, SSC-San Diego and miscellaneous contractors, with management oversight by SPAWAR.										

R-1 SHOPPING LIST - Item No. 129

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604721N / SHIPBOARD IW EXPLOIT SYSTEM			X2134 / SHIPBOARD IW EXPLOIT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	35.739	1.912	12/02	2.356	12/03	2.514	12/04	Continuing	Continuing	Continuing
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various		2.988		3.681		3.927		Continuing	Continuing	Continuing
Training Development	Various	Various		0.075		0.093		0.100		Continuing	Continuing	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			35.739	4.975		6.130		6.541		Continuing	Continuing	Continuing
Remarks: 1. "Total PYs Cost" is shown as Primary Hardware Development was taken from the previous budget submit which combined Hardware, Software development and integration into one number.												
Development Support											0.000	
Software Development	Various	Various		4.879		6.010		6.413		Continuing	Continuing	Continuing
Integrated Logistics Support	Various	Various	0.254	0.104		0.127		0.136		Continuing	Continuing	
Configuration Management	Various	Various		0.089		0.110		0.117		Continuing	Continuing	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.254	5.072		6.247		6.666		Continuing	Continuing	Continuing
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604721N / SHIPBOARD IW EXPLOIT SYSTEM			X2134 / SHIPBOARD IW EXPLOIT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	2.354	0.705	12/02	0.868	12/03	0.927	12/04	Continuing	Continuing	Cont.
Operational Test & Evaluation	Various	Various		0.321		0.395		0.421		Continuing	Continuing	
Live Fire Test & Evaluation											0.000	
Test Assets	Various	Various		0.334		0.412		0.439		Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			2.354	1.360		1.675		1.787		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	0.945	2.230		2.748		2.932		Continuing	Continuing	Continuing
Travel	Various	Various		0.115		0.142		0.152		Continuing	Continuing	Continuing
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.945	2.345		2.890		3.084		Continuing	Continuing	
Remarks:												
Total Cost			39.292	13.752		16.942		18.078		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N /</b>								0604721N/ SHIPBOARD IW EXPLOIT SYSTEM								X2134 SHIPBOARD IW EXPLOIT/COMMON DATA LINK-NAVY (CDL-N)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				CDL MSD ▲																												
ECP Block 1 Specification Written			▲																													
Award Block 1 Contract								Award ▲																								
<b>Test &amp; Evaluation Milestones</b>																																
Development Test												Block 1 DT-C																				
Operational Test																Block 1 OA-C																
Interoperability Testing								SHARP																								
<b>Production Milestones</b>																																
FRP FY03																																
FRP FY04																																
Deliveries								6								7																

R-1 SHOPPING LIST - Item No. 129

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

**UNCLASSIFIED**



CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RDT&E, N / BA-5								0604721N/ SHIPBOARD IW EXPLOIT SYSTEM								X2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC ON-LINE TRAINER (COLT)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
<b>COLT Server Software</b>																																
3.1.7 SW Development																																
3.1.7 SDT&E																																
3.1.7 System Documentation																																
3.1.7 Software Delivery																																
4.0 SW Development																																
4.0 SDT&E																																
4.0 System Documentation																																
4.0 Software Delivery																																
3x SW Development																																
3x SDT&E																																
3x System Documentation																																
3x Software Delivery																																
4x SW Development																																
4x SDT&E																																
4x System Documentation																																
4x Software Delivery																																
5.0 SW Development																																
5.0 SDT&E																																
5.0 System Documentation																																
5.0 Software Delivery																																
5x SW Development																																
5x SDT&E																																
5x System Documentation																																
5x Software Delivery																																
6.0 SW Development																																
6.0 SDT&E																																
6.0 System Documentation																																
6.0 Software Delivery																																
6x SW Development																																
6x SDT&E																																
6x System Documentation																																
6x Software Delivery																																
<b>Production Milestones</b>																																
FY03																																
FY04																																
FY05																																
FY06																																
FY07																																
FY08																																
FY09																																
Deliveries		Deliveries represents sites		3				8				3				3				5				2				2				

R-1 SHOPPING LIST - Item No. 129

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

CLASSIFICATION:

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EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>																														
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-5</b>				0604721N/ SHIPBOARD IW EXPLOIT SYSTEM												X2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC UNIFIED BUILD (CUB)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Software</b>																																
3.1.7 SW Development																																
3.1.7 SDT&E																																
3.1.7 System Documentation																																
3.1.7 Software Delivery																																
4.0 SW Development																																
4.0 SDT&E																																
4.0 System Documentation																																
4.0 Software Delivery																																
3x SW Development																																
3x SDT&E																																
3x System Documentation																																
3x Software Delivery																																
4x SW Development																																
4x SDT&E																																
4x System Documentation																																
4x Software Delivery																																
5.0 SW Development																																
5.0 SDT&E																																
5.0 System Documentation																																
5.0 Software Delivery																																
5x SW Development																																
5x SDT&E																																
5x System Documentation																																
5x Software Delivery																																
6.0 SW Development																																
6.0 SDT&E																																
6.0 System Documentation																																
6.0 Software Delivery																																
6x SW Development																																
6x SDT&E																																
6x System Documentation																																
6x Software Delivery																																

R-1 SHOPPING LIST - Item No. 129

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

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EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>													
Multi-Mission Payload (MMP)																																						
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																						
<b>RDT&amp;E, N / BA-5</b>								0604721N / SHIPBOARD IW EXPLOIT SYSTEM								X2134 SHIPBOARD IW EXPLOIT/MULTI-MISSION PAYLOAD (MMP)																						
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009									
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
<b>Acquisition Milestones</b>									EDM Award △													FRP Dec Blk 1 △																
<b>System Development</b>									S.E. Analysis △					DR △																								
<b>EDM Delivery</b>									A/C Analysis △					A/C Integration Planning																								
<b>Test &amp; Evaluation Milestones</b>																					EDM Deliveries △																	
Development Test																					Lab Tests △					Tech Eval △												
Operational Test																					Op Eva △																	

R-1 SHOPPING LIST - Item No. 129

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

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**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																							DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY							PROGRAM ELEMENT NUMBER AND NAME							PROJECT NUMBER AND NAME																	
<b>RDT&amp;E, N / BA-5</b>							0604721N/ SHIPBOARD IW EXPLOIT SYSTEM							X2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)																	
Fiscal Year	2002			2003				2004				2005				2006				2007				2008				2009			
	Contra	2	2Q	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Software</b>																															
Version 1 SW Development																															
Version 1 SDT&E																															
Version 1 Software Delivery																															
Version 2 SW Development																															
Version 2 Software Delivery																															
Version 3 SW Development																															
Version 3 Software Delivery																															
<b>Test &amp; Evaluation Milestones</b>																															
Compatibility Testing																															
Operational Test																															
<b>Production Milestones</b>																															
FY03																															
FY04																															
FY05																															
FY06																															
FY07																															
FY08																															
FY09																															
Deliveries																															

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

R-1 SHOPPING LIST - Item No. 129

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N /</b>								0604721N/ SHIPBOARD IW EXPLOIT SYSTEM								X2134 SHIPBOARD IW EXPLOIT/ANTENNA RF DISTRIBUTION (ARFD)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	Contra	2	2Q	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>				Award Contract △				Award Contract △				Award Contract △																				
Prototype Phase	██████████																															
System Development																																
EDM Delivery							EDM △					EDM △																				
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
FRP FY07																				Production Rolled into SSEE △												
Deliveries																																

R-1 SHOPPING LIST - Item No. 129

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

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				X2134 SHIPBOARD IW EXPLOIT/COMMON DATA LINK-NAVY (CDL-N)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone II (MSII)								
Contract Award		Q2						
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT)			Q3-Q4					
Operational Analysis				Q2-Q3				
Interoperability Testing		Q3-Q4	Q2-Q3		Q1-Q2			
Eng Dev Model (EDM)								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								
FOC					Q4			

R-1 SHOPPING LIST - Item No. 129

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 18 of 32)

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA 5</b>	0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				X2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC ON-LINE TRAINER (COLT)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>COLT Server Software</b>								
3.1.7 SW Development	Q4	Q1						
3.1.7 SDT&E		Q1-Q2						
3.1.7 System Documentation	Q4	Q1-Q2						
3.1.7 Software Delivery		Q2						
4.0 SW Development	Q4	Q1-Q2						
4.0 SDT&E		Q1-Q2						
4.0 System Documentation	Q4	Q1-Q2						
4.0 Software Delivery		Q3						
3x SW Development		Q2-Q3						
3x SDT&E		Q2-Q3						
3x System Documentation		Q3-Q4						
3x Software Delivery		Q4						
4x SW Development		Q4	Q1-Q4					
4x SDT&E		Q3-Q4	Q1-Q4	Q1				
4x System Documentation		Q3-Q4	Q1-Q4	Q1				
4x Software Delivery		Q2		Q1				
5.0 SW Development				Q2-Q4				
5.0 SDT&E				Q3-Q4	Q1			
5.0 System Documentation				Q2-Q4	Q1			
5.0 Software Delivery					Q1			
5x SW Development				Q4	Q1-Q2	Q1-Q3		
5x SDT&E					Q2-Q4	Q2-Q4		
5x System Documentation				Q4	Q1-Q4	Q1-Q4		
5x Software Delivery					Q4	Q4		
6.0 SW Development						Q4	Q1-Q3	
6.0 SDT&E							Q1-Q4	
6.0 System Documentation						Q4	Q1-Q4	
6.0 Software Delivery							Q4	
6x SW Development							Q4	Q1-Q3
6x SDT&E								Q1-Q4
6x System Documentation								Q1-Q4
6x Software Delivery								Q4

R-1 SHOPPING LIST - Item No. 129

**UNCLASSIFIED**

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 19 of 32)



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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				X2134 SHIPBOARD IW EXPLOIT/CRYPTOLOGIC UNIFIED BUILD (CUB)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Software Development v 3.1.7	Q4	Q1						
System Developmental Test & Eval v 3.1.7		Q1-Q2						
System Documentation v 3.1.7	Q4	Q1-Q2						
Software Delivery v 3.1.7		Q2						
Software Development v 4.0	Q4	Q1-Q2						
System Developmental Test & Eval v 4.0		Q1-Q3						
System Documentation v 4.0	Q4	Q1-Q3						
Software Delivery v 4.0		Q3						
Software Development v 3x		Q3						
System Developmental Test & Eval v 3x		Q3-Q4						
System Documentation v 3x		Q3-Q4						
Software Delivery v 3x		Q4						
Software Development v 4x		Q4	Q1-Q4	Q1				
System Developmental Test & Eval v 4x		Q4	Q1-Q4	Q1				
System Documentation v 4x		Q4	Q1-Q4	Q1				
Software Delivery v 4x			Q2	Q1				
Software Development v 5.0				Q2-Q4				
System Developmental Test & Eval v 5.0				Q2-Q4	Q1			
System Documentation v 5.0				Q1-Q4	Q1			
Software Delivery v 5.0					Q1			
Software Development v 5x				Q4	Q1-Q3	Q1-Q3		
System Developmental Test & Eval v 5x					Q2-Q4	Q2-Q4		
System Documentation v 5x				Q4	Q1-Q4	Q2-Q4		
Software Delivery v 5x					Q4	Q4		
Software Development v 6.0						Q4	Q1-Q3	
System Developmental Test & Eval v 6.0							Q1-Q4	
System Documentation v 6.0						Q4	Q1-Q4	
Software Delivery v 6.0							Q4	
Software Development v 6x							Q4	Q1-Q3
System Developmental Test & Eval v 6x								Q1-Q4
System Documentation v 6x								Q1-Q4
Software Delivery v 6x								Q4



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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA 5</b>	0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				X2134 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL EXPLOITATION EQUIPMENT INCR E (SSEE Incr E)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award	Q2				Q1			
Software Specification Review (SSR)	Q1-Q4	Q1-Q4						
Preliminary Design Review (PDR)		Q4						
System Development	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4
Critical Design Review (CDR)	Q1		Q2					
Test Readiness Review (TRR)	Q4		Q2					
Developmental Testing		Q1	Q2					
Eng Dev Model (EDM) SSEE Delivery - Lab	Q4							
Software Delivery - System LRIP Config S/W		Q1						
Preproduction Readiness Review (PRR)		Q2						
EDM SSEE Delivery - Ship		Q1						
Operational Testing		Q2						
Milestone III (MS C)			Q1					
Start Low-Rate Initial Production (LRIP)		Q2						
Physical Configuration Audit	Q4							
Functional Configuration Audit (FCA)	Q4							
Low-Rate Initial Production Delivery			Q2					
Technical Evaluation (TECHEVAL)		Q1						
M-DEMO		Q1						
Operational Evaluation (OPEVAL)		Q2-Q3						
FOLLOW-ON Operational Evaluation (FOTE)				Q3-Q4				
IOC				Q1				
Full Rate Production (FRP) Decision			Q1					
Full Rate Production Start			Q2					
First Deployment FRP Config				Q1				
Pre-Planned Improvements (P3I)		Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4	Q1-Q4
Material Support Date					Q4			

R-1 SHOPPING LIST - Item No. 129

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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE:		
Specific Emitter Identification (SEI)						February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA 5</b>	0604721N/ SHIPBOARD IW EXPLOIT SYSTEM				X2134 SHIPBOARD IW EXPLOIT/SPECIFIC EMITTER IDENTIFICATION (SEI)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SPAWAR Pgm Development	Q3-Q4							
Additional Requirements						Q1		
Contract Award		Q2				Q1-Q4		
System Requirements		Q1						
Systems Requirements Review		Q2				Q1		
Technical Information Meeting		Q2				Q1		
Architecture Definition		Q2				Q1		
Foreign Comparison Test (FCT) Planning		Q1				Q2		
FCT Test		Q3				Q2		
FCT Test Analysis		Q4				Q3		
Preliminary Design Review		Q4				Q3		
Critical Design Review		Q4						
Development Lab Set-up		Q4						
Platform Independent Prototype Development		Q4						
Phase 1 - Software Development		Q4						
Phase 2 - Hardware requirements		Q4						
Phase 3 - software development/hardware requirements		Q4						
Technical Information Meeting		Q4						
Software Delivery			Q1					
Hardware/software compatibility testing			Q1-Q2					
Test Readiness Review (TRR)			Q1-Q2		Q1-Q2	Q4	Q1-Q2	
Developmental Testing (DT-IIA)			Q1-Q2		Q1-Q2	Q4	Q1-Q2	
Logistics			Q2-Q4	Q1-Q4		Q1-Q4	Q1-Q2	
Phase 1/2/3 delivery			Q2-Q4	Q1-Q2	2Q	Q4	Q1-Q2	
Software only configuration Installation			Q2-Q4		Q1-Q2	Q4	Q1-Q2	
Hardware only configuration Installation			Q2-Q3	Q1-Q2	Q1-Q2		Q3	
Hardware/software configuration Installation			Q2-Q4		Q3		Q3	
Operational Testing (OT-IIA)			Q4		Q3			
Start Low-Rate Initial Production I (LRIP I)			Q3		Q3			
IOC			Q4				Q4	Q1

R-1 SHOPPING LIST - Item No. 129

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604721N/SHIPBOARD IW EXPLOIT SYSTEM				PROJECT NUMBER AND NAME X9242 / COOPERATIVE OUTBOARD LOGISTICS UPDATE (COBLU)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	0.000	0.000	3.325	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.325
RDT&E Articles Qty											0

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

Cooperative Outboard Logistics Update, COBLU, is a cooperative program between the United States and the United Kingdom. The existing OUTBOARD system (AN/SSQ-108) has been updated to provide comprehensive surface tactical capability. The program maximizes use of already developed military and commercial signal exploitation equipment. The system architecture requires minimal effort to implement future technologies necessary to handle the evolving threat. This effort will develop, integrate and test an engineering prototype of Low Probability of Intercept (LPI) subsystem to detect recognize and process the most current threat signals. Once development effort is completed it will be included as a pre-planned product improvement for COBLU introduced through field change kits.

**(U) JUSTIFICATION FOR BUDGET ACTIVITY:**

This program is funded under BA-5, ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N/SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X9242 / COOPERATIVE OUTBOARD LOGISTICS UPDATE	
<b>(U) B. Accomplishments/Planned Program</b>			
	FY 02	FY 03	FY 04
Accomplishments/Effort/Subtotal Cost	0.000	3.325	0.000
RDT&E Articles Quantity			
Cooperative Outboard Logistics Update (COBLU)			
FY03 - Develop, integrate and test an engineering prototype of a Low Probability of Intercept (LPI) subsystem.			

R-1 SHOPPING LIST - Item No.

129

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**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 26 of 32)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>																																																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604721N/SHIPBOARD IW EXPLOIT SYSTEM	PROJECT NUMBER AND NAME X9242 / COOPERATIVE OUTBOARD LOGISTICS UPDATE																																																
<p><b>(U) C. PROGRAM CHANGE SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: right;">FY 2002</th> <th style="width: 10%; text-align: right;">FY 2003</th> <th style="width: 10%; text-align: right;">FY 2004</th> </tr> </thead> <tbody> <tr> <td>(U) Funding:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>  Previous President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>  Current BES/President's Budget</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">3.325</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>  Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">3.325</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="4" style="padding-left: 20px;">Summary of Adjustments</td> </tr> <tr> <td>  Cong. Add for COBLU update</td> <td></td> <td style="text-align: right;">3.400</td> <td></td> </tr> <tr> <td>  Business Process Reform (SEC. 8100)</td> <td></td> <td style="text-align: right;">-0.014</td> <td></td> </tr> <tr> <td>  Economic Assumtions (SEC. 8135)</td> <td></td> <td style="text-align: right;">-0.019</td> <td></td> </tr> <tr> <td>  IT Cost Growth (SEC. 8109)</td> <td></td> <td style="text-align: right;">-0.006</td> <td></td> </tr> <tr> <td>  Inflation Savings</td> <td></td> <td style="text-align: right;">-0.036</td> <td></td> </tr> <tr> <td>  Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">3.325</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p>(U) Schedule:   Not Applicable</p> <p>(U) Technical:   Not Applicable</p>				FY 2002	FY 2003	FY 2004	(U) Funding:				Previous President's Budget:	0.000	0.000	0.000	Current BES/President's Budget	0.000	3.325	0.000	Total Adjustments	0.000	3.325	0.000	Summary of Adjustments				Cong. Add for COBLU update		3.400		Business Process Reform (SEC. 8100)		-0.014		Economic Assumtions (SEC. 8135)		-0.019		IT Cost Growth (SEC. 8109)		-0.006		Inflation Savings		-0.036		Subtotal	0.000	3.325	0.000
	FY 2002	FY 2003	FY 2004																																															
(U) Funding:																																																		
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R-1 SHOPPING LIST - Item No. 129

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604721N/SHIPBOARD IW EXPLOIT SYSTEM			PROJECT NUMBER AND NAME X9242 / COOPERATIVE OUTBOARD LOGISTICS UPDATE					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
If effort is successful 9 field change kits will be procured with SCN.										
<b>(U) E. ACQUISITION STRATEGY:</b>										
Not Applicable										

R-1 SHOPPING LIST - Item No. 129

**UNCLASSIFIED**

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604721N/SHIPBOARD IW EXPLOIT SYSTEM			X9242/COOPERATIVE OUTBOARD LOGISTICS UPDATE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development				0.250	02/03						0.250	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.250		0.000		0.000		0.000	0.250	
Remarks:												
Development Support											0.000	
Software Development				3.075	02/03						3.075	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	3.075		0.000		0.000		0.000	3.075	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604721N/SHIPBOARD IW EXPLOIT SYSTEM			X9242/COOPERATIVE OUTBOARD LOGISTICS UPDATE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	3.325		0.000		0.000		0.000	3.325	
Remarks:												

R-1 SHOPPING LIST - Item No. 129

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 30 of 32)

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																									DATE: <b>February 2003</b>							
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME												
<b>RDT&amp;E, N / BA-5</b>										0604721N/ SHIPBOARD IW EXPLOIT SYSTEM										X9242 SHIPBOARD IW EXPLOIT/SHIPS SIGNAL COOPERATIVE OUTBOARD LOGISTICS UPDATE, COBLU												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
LPI Subsystem Development																																
HW development/selection																																
Software Development																																
System Integration																																
<b>Test &amp; Evaluation Milestones</b>																																
Capability Demonstration																																
Regression Test																																
Development Test																																
<b>Production Milestones</b>																																
Note: Outyear Fielding of this subsystem will be handled through pre-planned product improvement and fielded using field change kits. Currently nine (9) kits will be procured with SCN Funding.																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 129

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

**UNCLASSIFIED**



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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604727N Joint Standoff Weapon System (JSOW)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	30.282	16.283	0.775	0.526	0.388	0.339	0.346	0.351
A2068 Joint Standoff Weapon (JSOW)	30.282	16.283	0.775	0.526	0.388	0.339	0.346	0.351

(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. JSOW is a Navy-led joint Navy/Air Force program.

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. Planned production of the JSOW/BLU-108 was deferred, however the Navy will conduct IOT&E in FY 2003 to verify operational effectiveness and suitability.

The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomus Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. The JSOW Unitary will provide increased accuracy and lethality and the capability for aimpoint selection. The Unitary Systems Development and Demonstration (SD&D) program develops the terminal seeker and ATA capability, and integrates these with a 500 lb class "Unitary" warhead, the British Royal Augmentation Charge (BROACH) Multiple Warhead System (MWS). The BROACH MWS provides blast/fragmentation effects as well as enhanced penetration capability against hard point targets. 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. Unitary variant Operational Evaluation (OPEVAL) and Low Rate Initial Production is planned for FY 2003, with Full Rate Production beginning in FY 2004.

JSOW utilizes a "common truck" for both AGM-154A and AGM-154C variants. Through adherence to international standards for weapons interfaces and weight and dimension considerations, JSOW will be compatible with Air Force and NATO aircraft.

(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.

R-1 SHOPPING LIST - Item No. 130

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon System (JSOW)			PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon System (JSOW)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>30.282</b>	<b>16.283</b>	<b>0.775</b>	<b>0.526</b>	<b>0.388</b>	<b>0.339</b>	<b>0.346</b>	<b>0.351</b>
RDT&E Articles Qty	<b>19</b>							

(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 was deferred in the POM-04 budget. However, JSOW-B FY 03 DT/OT funding will still be required to verify the AUR ECP fix during operational test using JSOW-A weapons. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomus Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. 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.

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 FY 01 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon System (JSOW)	PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	30.282	15.083	0.000	0.000
RDT&E Articles Quantity	19			

Perform Unitary SD&D efforts, configuration audits and environmental testing and perform Broach insertion  
 Perform Unitary Broach warhead and fuzing development  
 Perform Unitary combined Development Testing and Operational Testing (DT/OT) on Seeker and Broach warhead  
 Perform Unitary system engineering technical support; complete insensitive munitions qualifications and safety approvals

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.200	0.775	0.526
RDT&E Articles Quantity				

Perform Baseline JMPS Migration; plan new functions into JSOW Common Unique Planning Component (CUPC) and develop new software releases of CUPC.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.000	0.000	0.000
RDT&E Articles Quantity				

Conduct AGM-154B Initial Operational Test and Evaluation (IOT&E).



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon (JSOW)	PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget		26.615	16.652	0.796	0.596
Current BES/President's Budget		30.282	16.283	0.775	0.526
Total Adjustments		3.667	-0.369	-0.021	-0.070
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions			-0.099		
Congressional rescissions		-0.057			
SBIR/STTR Transfer					
Economic Assumptions		-0.083	-0.270	-0.018	-0.011
Reprogrammings		3.807			
Other Navy/OSD Adjustments				-0.003	-0.059
Congressional increases					
Subtotal		3.667	-0.369	-0.021	-0.070
(U) Schedule Not Applicable					
(U) Technical: Not Applicable					

R-1 SHOPPING LIST - Item No. 130

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon (JSOW)	PROJECT NUMBER AND NAME A2068 Joint Standoff Weapon (JSOW)
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
USN WP, N; BLI: 223000 JSOW										
\$\$	0.000	101.262	138.451	137.147	144.015	126.226	128.217	130.174	179.201	1084.693
Qtys	0	165	429	463	490	404	387	405	8011	
USAF WP,F; BLI: 27324f* JSOW										
\$\$	10.206	12.208	79.017	83.440	84.293	88.302	70.411	71.740	156.311	655.928
Qtys	0	18	335	363	375	380	299	301	735	

**(U) E. 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.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604727N Joint Standoff Weapon System (JSOW)			A2068 Joint Standoff Weapon (JSOW)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	Raytheon Tucson, AZ	272.295								272.295	272.295
Primary Hardware Development	SS/CPIF	Raytheon Tucson, AZ	242.000	7.183	11/02						249.183	249.183
Ancillary Hardware Development	SS/CPIF	Textron	2.923								2.923	2.923
Ancillary Hardware Development	SS/FPIF	BAE Chorley, England	10.000	2.900	11/02						12.900	12.900
Aircraft Integration	SS/CPIF	Mtech/McDonnell Douglas	21.455								21.455	21.455
Aircraft Integration	WX	NAWCWD China Lake, CA	15.058								15.058	
System Engineering	WX	NAWCWD China Lake, CA	105.527	0.600	11/02						106.127	
Award Fees	FEE	Textron / Raytheon	7.198								7.198	7.198
Subtotal Product Development			676.456	10.683							687.139	
Remarks:												
Software Development	SS/FPIF	Raytheon Tucson, AZ	2.191	0.200	03/03	0.775	10/03	0.526	10/04	1.424	5.116	5.116
Subtotal Support			2.191	0.200		0.775		0.526		1.424	5.116	5.116
Remarks:												

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604727N Joint Standoff Weapon System (JSOW)			A2068 Joint Standoff Weapon (JSOW)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCWD China Lake, CA	23.920	2.200	11/02						26.120	
Operational Test & Evaluation	WX	OPTEVFOR Norfolk, VA	5.097	3.000	01/03						8.097	
Subtotal T&E			29.017	5.200							34.217	
Remarks:												
Contractor Engineering Support	Various	Various	17.350	0.100	11/02						17.450	
Travel	Various	Various	6.992	0.100	10/02						7.092	
Subtotal Management			24.342	0.200							24.542	
Remarks:												
Total Cost			732.006	16.283		0.775		0.526		1.424	751.014	
Remarks:												

# UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R4, Schedule Profile																										DATE: <b>February 2003</b>										
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-5</b>										0604727N Joint Standoff Weapon System										A2068 Joint Standoff Weapon (JSOW)																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>JSOW Unitary</b>																																				
<b>Acquisition Milestones</b>																																				
Missile Integration																																				
Missile Level Qualification																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				
<b>Production Milestones</b>																																				
LRIP FY 03																																				
FRP-1 FY 04																																				
FRP-II FY 05																																				
<b>JSOW-B</b>																																				

R-1 SHOPPING LIST - Item No. 130

UNCLASSIFIED



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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	62.141	60.598	40.930	25.633	8.010	18.475	11.781	0.000
20166/SPS Improvement	6.590	3.886	1.944	0.000	0.000	0.000	0.000	0.000
K2178/QRCC	44.243	47.597	36.572	25.633	8.010	18.475	11.781	0.000
29081 Phalanx CIWS SEARAM*	5.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K2190 NULKA*	1.347	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K2309/AIEWS*	2.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22649/IRST	2.566	9.115	2.414	0.000	0.000	0.000	0.000	0.000
<p><b>*FY02 Congressional Adds: RAM (+\$5.377) should be in PE 64756, NULKA (+\$1.347) and AIEWS (+\$2.018) should be in PE 64757.</b></p> <p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>This program element consolidates currently ongoing and planned programmatic efforts related to Detect &amp; 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>								

R-1 SHOPPING LIST - Item No.

131

# UNCLASSIFIED

**Exhibit R-2, RD TEN Budget Item Justification**  
(Exhibit R-2, page 1 of 30)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	
<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><b>DETECTION:</b> 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 (22649). These provide improvements to both active and passive detection.</p> <p><b>CONTROL:</b> 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>		

R-1 SHOPPING LIST - Item No. 131

**UNCLASSIFIED**

**Exhibit R-2, RDTEN Budget Item Justification**  
(Exhibit R-2, page 2 of 30)



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 20166 SPS Improvement Program			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>6.590</b>	<b>3.886</b>	<b>1.944</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project provides funding for the SPS Improvement Program (SPQ-9B). This program develops and tests performance and reliability upgrades for search radar equipment to meet the evolving threat. The AN/SPQ-9 radar supports surface engagement capability to effectively detects and tracks sea-skimming, low radar cross-section, high-speed targets in heavy clutter environments. The radar interfaces with ship combat systems via either the MK-86 GFCS, Ship Self Defense System (SSDS), or Cooperative Engagement Capability (CEC) on CG47, CV/CVN, LHD, LPD 17 and DDG 51 class ships. The AN/SPQ-9B uses a high resolution, track-while-scan, X-Band, pulse Doppler radar to provide real time acquisition and automatic tracking of multiple targets. A lightweight antenna assembly has also been furnished as an engineering change.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME 20166 SPS Improvement Program

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.000	1.426	1.944	0.000
RDT&E Articles Quantity				

AN/SPQ-9B Integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.590	2.460	0.000	0.000
RDT&E Articles Quantity				

AN/SPQ-9B Developmental Testing on Lightweight Antenna configuration changes/Operational Test and Evaluation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 131

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 20166 SPS Improvement Program			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 03 Pres Controls):		4.855	3.973	1.988	0
President's Budget (FY 04/05 Pres Controls):		6.59	3.886	1.944	0
Total Adjustments		1.735	-0.087	-0.044	0
Summary of Adjustments					
SBIR/STTR Transfer		-0.129			
Programmatic Adjustments		1.905			
Inflation			-0.042	-0.044	
Congressional Reductions		-0.028	-0.045		
Minor Pricing Adjustments		-0.013			
Subtotal		1.735	-0.087	-0.044	0
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL			PROJECT NUMBER AND NAME 20166 SPS Improvement Program				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN LINE 511000 (AN/SPQ-9B)	22.069	22.399								
OPN LINE 202600 (AN/SPQ-9B)			9.739	9.068	7.642	11.523	27.305	27.99	CONT.	CONT.
<b>E. ACQUISITION STRATEGY:</b>										
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 FY2002, Lockheed Martin to develop AN/SPQ 9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.										
<b>F. MAJOR PERFORMERS:</b>										
NORTHROP GRUMMAN CORP. NORDEN SYSTEMS MELVILLE, N.Y. 11747 PRIME CONTRACTOR		03/02								
LOCKHEED MARTIN CORP NE&SS-SURFACE SYSTEMS MOORESTOWN, N.J. SPQ-9B/AEGIS INTEGRATION		05/02								

R-1 SHOPPING LIST - Item No.

131

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL			20166 SPS Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF/DA	NGNS, Melville NY	40.308	1.426	03/02	0.000	N/A				41.734	41.734
Ancillary Hardware Development	FFP	*ITT/G Van Nuys, CA	7.000	0.000	N/A	0.000	N/A				7.000	7.000
Aircraft Integration			0.000	0.000		0.000	N/A				0.000	0.000
Ship Integration	CPAF	LM, Moorestown, NJ	2.000	2.460	10/02	1.944	10/03				6.404	6.404
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			49.308	3.886		1.944		0.000		0.000	55.138	N/A
Remarks: *Development cost of AN/SPS-48 Transmitter.												
Development Support Equipment											0.000	
Software Development	WR	PHD, NSWC,CA	5.985	0.000	N/A	0.000	N/A			0.000	5.985	5.985
Training Development		Various	2.112	0.000	N/A	0.000	N/A			0.000	2.112	2.112
Integrated Logistics Support	WR	Various	2.112	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	6.580	6.580
Technical Data	WR	Various	3.170	0.000	N/A	0.000	N/A			0.000	3.170	3.170
Design Development	WR	NRL, WASH,DC	0.000	0.000	N/A	0.000	N/A			0.000	0.000	0.000
											0.000	0.000
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												

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			20166 SPS Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	1.665	1.665
DT&E	WR	NRL, Washington DC	1.933	0.000	N/A	0.000	N/A			0.000	1.933	1.933
DT&E	WR	PT. MAGU, CA	0.300	0.000	N/A	0.000	N/A			0.000	0.300	0.300
OT&E	WR/RC	PHD NSWC, CA	0.560	0.000	N/A	0.000	N/A			0.000	0.560	0.560
OT&E	WR	NRL, Washington DC	0.410	0.000	N/A	0.000	N/A			0.000	0.410	0.410
OT&E	WR	OPTEVFOR, NORFOLK	0.792	0.000	N/A	0.000	N/A			0.000	0.792	0.792
OT&E	IPR	NASA, MOFFET FIELD	0.104	0.000	N/A	0.000	N/A			0.000	0.104	0.104
Subtotal T&E			5.764	0.000		0.000		0.000		0.000	5.764	
Remarks:												
Cost Categories											0.000	
MANAGEMENT											0.000	
Miscellaneous	Various	Various	2.559		N/A	0.000	N/A	0.000		0.000	2.559	2.559
SBIR			0.129								0.129	0.129
											0.000	
											0.000	
Subtotal Management			2.688	0.000		0.000		0.000		0.000	2.688	
Remarks:												
Total Cost			77.719	3.886		1.944		0.000		0.000	83.549	
Remarks:												

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

**February 2003**

APPROPRIATION/BUDGET ACTIVITY

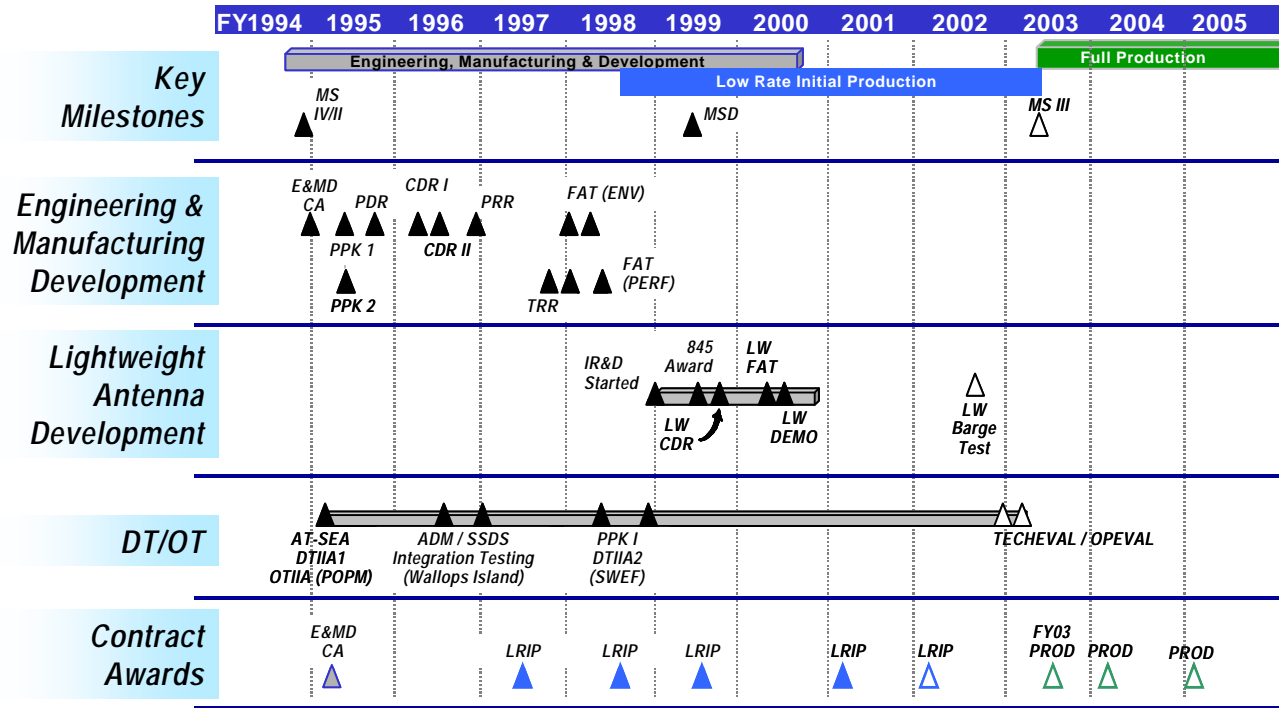
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

**RDT&E, N/BA5**

0604755N SHIP SELF DEFENSE (DETECT & CONTROL)

20166 SPS Improvement Program



R-1 SHOPPING LIST - Item No. 131

Exhibit R-4, RDT&E Project Justification  
(Exhibit R-4, page 9 of 30)

**UNCLASSIFIED**





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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME K2178/Quick Reaction Combat Capability			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>44.243</b>	<b>47.597</b>	<b>36.572</b>	<b>25.633</b>	<b>8.010</b>	<b>18.475</b>	<b>11.781</b>	<b>0.000</b>
RDT&E Articles Qty								

**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 (AAW) 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.

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 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.

SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 consists of leveraging critical experiments and reuse of technology and software from SSDS MK1. 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, and surface threats using both ownship and remote data in support of the AAW Capstone Requirements. SSDS MK2 becomes 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 commonality and lower life cycle costs.

Single Integrated Air Picture (SIAP) provides a common correlation/decorrelation scheme among all services giving the warfare commanders a Single Integrated Air Picture that will eliminate cluttered tactical picture and improve operator workload and optimize the allocation of weapons and threats.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME K2178/Quick Reaction Combat Capability

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	26.458	26.511	21.802	19.504
RDT&E Articles Quantity				

Develop and deliver the computer program products for each of the SSDS MK 2 ship class variants (Mod 1 for Carriers and Mod 2 for LPDs). Conduct reviews of computer program systems engineering products to assess the computer program development and integration progress. Code each new or modified unit as specified in the detailed design, revise and compile the code until it compiles without errors. Conduct a unit test for all new and modified software units, identify and document test cases describing their purpose, the functions being tested, the test environment, and the test results. Evaluate the test results and correct the code and retest, if necessary. Conduct a Formal Qualifications Test (FQT) before delivery to test certification facilities and continue to support testing efforts through computer program corrections and retest.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	5.486	2.087	0.000
RDT&E Articles Quantity				

Complete systems requirements and identify necessary functionality changes for the LHD class ship. Complete software engineering documentation and reviews, begin computer program coding, and begin preparations for test requirements and events.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.000	15.600	11.140	4.560
RDT&E Articles Quantity				

Complete the SSDS MK 2 MOD 0 required development and operational test events at SCSC Wallops Island and onboard the CVN 68, USS NIMITZ, as well as data analysis and identifying required computer program corrections.  
 Conduct comprehensive combat system tests on SSDS MK 2 MOD 1 (CVN 76) at Wallops Island, including development tests, data extraction, data analysis and identifying computer program corrections.  
 Complete all test preparations and documentation for LPD 17 configuration testing efforts planned in FY05, and participate and assist in the Follow-On Test Evaluation (FOT&E) conducted on the CVN 76 in FY05.

R-1 SHOPPING LIST - Item No. 131

# UNCLASSIFIED

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 12 of 30)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME K2178/Quick Reaction Combat Capability
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**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.700	0.000	0.000	0.000
RDT&E Articles Quantity				

Applied remaining Labor Rate Adjustment on the development, integration and delivery of Raytheon contract.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.085	0.000	0.000	0.000
RDT&E Articles Quantity				

Provided the USS NIMITZ with combat system battlegroup support to test events and missile exercises.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.543	1.569
RDT&E Articles Quantity				

Conduct Studies & Analysis to Provide Single Integrated Air Picture (SIAP) funds to eliminate cluttered tactical picture and improve operator workload and optimize the allocation of weapons and threats of the MK2 System.

R-1 SHOPPING LIST - Item No. 131

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME K2178/Quick Reaction Combat Capability			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		44.538	48.673	36.386	24.813
President's Budget: (FY04/05 Pres Controls)		44.243	47.597	36.572	25.633
Total Adjustments		-0.295	-1.076	0.186	0.820
Summary of Adjustments					
Program Adjustments		1.505			
SBIR/STTR Transfer		-1.031			
Minor Pricing Adjustments		-0.158		-0.567	-0.227
Inflation			-0.516	-0.847	-0.553
Congressional Reductions		-0.611	-0.560		
C-3 SIAP				1.600	1.600
Subtotal		-0.295	-1.076	0.186	0.820
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 131

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL			PROJECT NUMBER AND NAME K2178/Quick Reaction Combat Capability				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Ship Self Defense System OPN / 523900 , 523905 , 523906	38.583	46.234	58.089	42.693	35.902	30.152	30.813	31.337	181.2	631.8
SCN CV(N) / CVN 70	0	50.275	0	0	0	0	0	0	0	50.275
SCN LPD ship class		20.205	20.205		40.41	20.205	40.41	0	CONT.	141.435
Related RDT&E: PE 0603658N (Cooperative Engagement Capability CEC)										
<b>E. ACQUISITION STRATEGY:</b>										
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.										
<b>F. MAJOR PERFORMERS:</b>										
Raytheon Systems Company, San Diego, CA. Award date Dec. 98 Provides the systems engineering that assists in establishing the requirements for the computer program development and hardware design, conduct system development, testing, production, packaging, shipping, delivery and configuration management for the Ship Self Defense System (SSDS) MK 2 equipment for the CVN and LPD Ship Classes.										

R-1 SHOPPING LIST - Item No. 131

# UNCLASSIFIED

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			K2178/Quick Reaction Combat Capability						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAVSEA/DD-Dahlgren, VA	19.983	1.825	10/02	2.283	10/03	2.024	10/04	0.000	26.115	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	30.045	2.033	11/02	2.886	11/03	1.779	11/04	0.000	36.743	N/A
Systems Engineering	WR	NAVSEA/PHD-Pt Hueneme,CA	9.273	1.189	10/02	0.430	10/03	0.200	10/04	0.000	11.092	N/A
Systems Engineering	WR	NAVSEA/PHD-Dam Neck, VA	1.940	1.153	10/02	1.407	10/03	0.654	10/04	0.000	5.154	N/A
Systems Engineering	SS/CPAF	RSC(5108)-San Diego, CA	72.788	27.525	10/02	17.055	10/03	0.000	N/A	0.000	117.368	117.368
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
	SS/CPFF	RSC(5104)-San Diego, CA	0.800	0.000	N/A	0.000	N/A	15.016	10/04	0.000	15.816	15.816
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	7.525	4.452	10/02	3.032	10/03	0.000	N/A	0.000	15.009	15.009
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	2.163
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	0.175	0.075	N/A	0.000	N/A	0.000	N/A	0.000	0.250	N/A
Subtotal Product Development			241.411	38.252		27.093		19.673		0.000	326.429	N/A
Remarks:												
QA/RMA	WR	NWAS Corona	8.640	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.640	
Subtotal Support			8.640	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.640	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			K2178/Quick Reaction Combat Capability						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAVSEA/PHD-Pt Hueneme,CA	23.993	4.913	10/02	2.350	10/03	2.500	10/04	0.000	33.756	N/A
Developmental Test & Evaluation	WR	NAVSEA/Dam Neck, VA	1.105	0.000	10/02	0.000	10/03	0.000	10/04	0.000	1.105	N/A
Developmental Test & Evaluation	WR	NAVSEA DD, Wallops Island	14.836	1.651	10/02	4.293	10/03	1.500	10/04	0.000	22.280	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	3.410	1.140	N/A	0.500	N/A	0.000	N/A	0.000	5.050	N/A
Developmental Test & Evaluation	WR	NAVSEA/CORONA, Corona CA	0.998	0.000	10/02	0.800	10/03	0.500	10/04	0.000	2.298	N/A
Developmental Test & Evaluation	WR	OPTEVFOR	0.863	0.185	10/02	0.250	10/03	0.250	10/04	0.000	1.548	N/A
Misc.	Various	Various	3.314	0.610	N/A	0.525	N/A	0.525	N/A	0.000	4.974	N/A
Subtotal T&E			48.519	8.499		8.718		5.275		0.000	71.011	N/A
Remarks:												
Program Management Support			7.661	0.846	N/A	0.761	N/A	0.685	N/A	0.000	9.953	N/A
											0.000	N/A
Subtotal Management			7.661	0.846		0.761		0.685		0.000	9.953	N/A
Remarks:												
Total Cost			306.231	47.597	N/A	36.572	N/A	25.633	N/A	0.000	416.033	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 131

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**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 17 of 30)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
<b>RDT&amp;E, N / BA-5</b>								0604755N SHIP SELF DEFENSE (DETECT & CONTROL)								K2178/Quick Reaction Combat Capability																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>	MS C Approved July 98																															
<b>Software</b>																																
SSDS MK 2 MOD 1 (CVN)	Development/Integration Test/FQT				PrePlanned Performance Improvements (P3I)																											
SSDS MK 2 MOD 2 (LPD)					Development/Integration Test/FQT				P3I																							
SSDS MK 2 MOD X (LHD)					Development/Integration Test/FQT				P3I				LHD 8 Unique																			
<b>Test &amp; Evaluation</b>																																
SSDS MK 2 MOD 1					DT-III B PHASE 1																											
SSDS MK 2 MOD 2					LPD 17 DIT				DT-III C PHASE 1				DT-III C PHASE 2																			
SSDS MK 2 MOD X													DT PHASE 1				DT PHASE 2															
<b>Hardware Ship Delivery</b>																																
Initial Baseline	▲ CVN 76				▲ CVN 69		▲ LPD 17		▲ CVN 68		▲ LPD 20																					
Tech Refresh Baseline					▲ LPD 18/19				▲ LHD 8		▲ LPD 21 LHD 1		▲ CVN 70		▲ LPD 21 LHD 7																	

R-1 SHOPPING LIST - Item No. 131

\* Efforts described with dotted lines in FY 06 support the SCN LHD-8 schedule

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N BA-5</b>	0604755N SHIP SELF DEFENSE (DETECT & CONTROL)				K2178/Quick Reaction Combat Capability			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>SSDS MK 2 MOD 0 (CVN 68)</b>								
CSIT TESTING	2Q-4Q							
DEVELOPMENTAL TESTING AT WALLOPS	1Q-4Q	1Q						
TEST READINESS REVIEW (TRR)	2Q							
CSSQT	4Q							
ONBOARD TEST EVENTS		1Q						
<b>SSDS MK 2 MOD 1 (CV/CVNs)</b>								
SYSTEM DEVELOPMENT	1Q-3Q							
INTEGRATION TESTING	3Q-4Q	1Q						
FORMAL QUALIFICATION TEST (FQT)		1Q-2Q						
INTEGRATION/DEVELOPMENTAL TESTS / Phase I	2Q-4Q	1Q-4Q	1Q-4Q					
TEST READINESS REVIEW (TRR)		1Q	4Q					
CSIT TESTING		2Q-4Q	1Q-2Q					
ONBOARD TEST EVENTS / Phase II	3Q	1Q-4Q	1Q-4Q					
CSSQT			4Q					
<b>SSDS MK 2 MOD 2 (LPDs)</b>								
SYSTEM DEVELOPMENT	1Q-4Q	1Q-3Q						
INTEGRATION TESTING		3Q-4Q	1Q-2Q					
FORMAL QUALIFICATION TEST (FQT)			2Q-3Q					
LPD-17 (SCN) DIT	4Q	1Q						
INTEGRATION/DEVELOPMENTAL TESTS / Phase I		1Q-4Q	1Q-4Q					
TEST READINESS REVIEW (TRR)			1Q	2Q				
CSIT TESTING			2Q-4Q	1Q				
ONBOARD TEST EVENTS / Phase II			1Q-4Q	1Q-3Q				
CSSQT				3Q				
<b>SSDS MK 2 MOD X (LHDs)</b>								
SYS ENGINEERING/SYSTEM DEVELOPMENT	1Q-4Q	1Q-4Q	1Q-3Q					
INTEGRATION TESTING			3Q-4Q	1Q-2Q				
FORMAL QUALIFICATION TEST (FQT)				2Q-3Q				
INTEGRATION/DEVELOPMENTAL TESTS / Phase I				1Q-4Q				
TEST READINESS REVIEW (TRR)				2Q				
CSIT TESTING				3Q-4Q	1Q-3Q			
ONBOARD TEST EVENTS /Phase II (LHD 8 Unique)					1Q-4Q			
CSSQT						1Q		

R-1 SHOPPING LIST - Item No. 131

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 19 of 30)

**UNCLASSIFIED**

R-4

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>												PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE-EMD								PROJECT NUMBER AND NAME K2190 / SEA RAM SYSTEM ORDALT UPGRADE												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>				▲	Contract Modification																											
System Engineering*																																

R-1 SHOPPING LIST - Item No. 131

\* FY02 Congressional Plus-up released 4th quarter FY02. Funds initiation of development activity through the end of 1st quarter FY03.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME 22649 Infrared Search and Track (IRST)			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>2.566</b>	<b>9.115</b>	<b>2.414</b>					
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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. In addition, IRST provides Situational Awareness (SA), detection and tracking of surface and low-flying targets which pose threats to ships at-anchor, pier-side or transiting narrow waterways. These features support platform Anti-terrorism and Force Protection (AT/FP) requirements. 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 for the ships' combat system.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME 22649 Infrared Search and Track (IRST)

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.541	5.153	0.850	

Continue Hardware Fabrication, Integration and Test

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.302	0.335	0.150	

Continue Systems Engineering; and begin Systems Integration and Test

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.774	1.770		

Continue Software Modifications

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME 22649 Infrared Search and Track (IRST)

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.050	0.055	0.050	

Continue Integrated Logistics, Reliability and Maintainability Support

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.600	1.300	0.369	

Continue Independent Systems Engineering

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.087	0.087	0.050	

Continue Contract Engineering Services

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME 22649 Infrared Search and Track (IRST)

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.212	0.415	0.245	

Continue Program Management/Technical Support

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.700	

Continue Developmental Test & Evaluation and Conduct Operational Assessment

R-1 SHOPPING LIST - Item No. 131

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME 22649 Infrared Search and Track (IRST)			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		2.676	9.320	2.469	
Current President's Budget: (FY04/05 Pres Controls)		2.566	9.115	2.414	
Total Adjustments		-0.110	-0.205	-0.055	0.000
Summary of Adjustments					
SBIR/STTR Transfer		-0.044			
Inflation			-0.099	-0.055	
Congressional Reductions		-0.014	-0.106		
Minor Pricing Adjustments		-0.052			
Subtotal		-0.110	-0.205	-0.055	0.000
Schedule: Not Applicable					
Technical: Not Applicable					

R-1 SHOPPING LIST - Item No. 131

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-5</b>	0604755N SHIP SELF DEFENSE (DETECT & CONTROL	22649 Infrared Search and Track (IRST)	
<b>D. OTHER PROGRAM FUNDING SUMMARY: Not Applicable</b>			
<b>E. ACQUISITION STRATEGY: Not Applicable</b>			
<b>F. MAJOR PERFORMERS:</b>			
Lockheed Martin Integrated Systems, Inc, Orlando Florida	FY-02	FY-03	FY-04
Primary Hardware Development, Systems Engineering, Systems Integration and Test	11/01	11/02	11/03
NSWC Dahlgren		10/01	10/02 10/03

R-1 SHOPPING LIST - Item No. 131

**UNCLASSIFIED**



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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL			22649 Infrared Search and Track (IRST)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	LOCKHEED MARTIN	49.386	4.586	11/02	0.757	11/03				54.729	54.729
Systems Engineering	C/CPAF	LOCKHEED MARTIN		0.335	11/02	0.150	11/03				0.485	0.485
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Integration & Test	C/CPAF	LOCKHEED MARTIN									0.000	
Contract Engineering Services	C/CPAF	LOCKHEED MARTIN		0.087	11/02	0.050	11/03				0.137	0.137
SPCU	C/CPAF	LOCKHEED MARTIN									0.000	
Tooling											0.000	
GFE											0.000	
Award Fees	C/CPAF	LOCKHEED MARTIN		0.567	11/02	0.093	11/03				0.660	0.660
Subtotal Product Development			49.386	5.575		1.050		0.000		0.000	56.011	
Remarks:												
Development Support											0.000	
Software Development&Mods	Various	Various	4.349	1.770							6.119	6.119
Training Development											0.000	
Integrated Logistics Support			0.889	0.055		0.050					0.994	0.994
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			5.238	1.825		0.050		0.000		0.000	7.113	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			22649 Infrared Search and Track (IRST)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Dev T&E Operational Assessment	WX	NSWC/OPTEVFOR	2.300			0.700					3.000	
Operational Test & Evaluation	WX	NSWC/Integration Test	0.875								0.875	
Independent Systems Engineering	WX	NSWC/Dahlgren	2.337	1.300		0.369					4.006	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			5.512	1.300		1.069		0.000		0.000	7.881	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	VARIOUS	VARIOUS	2.901	0.380		0.175					3.456	
Travel	PD		0.124	0.035		0.070					0.229	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.025	0.415		0.245		0.000		0.000	3.685	
Remarks:												
Total Cost			63.161	9.115		2.414		0.000		0.000	74.690	
Remarks:												

R-1 SHOPPING LIST - Item No. 131

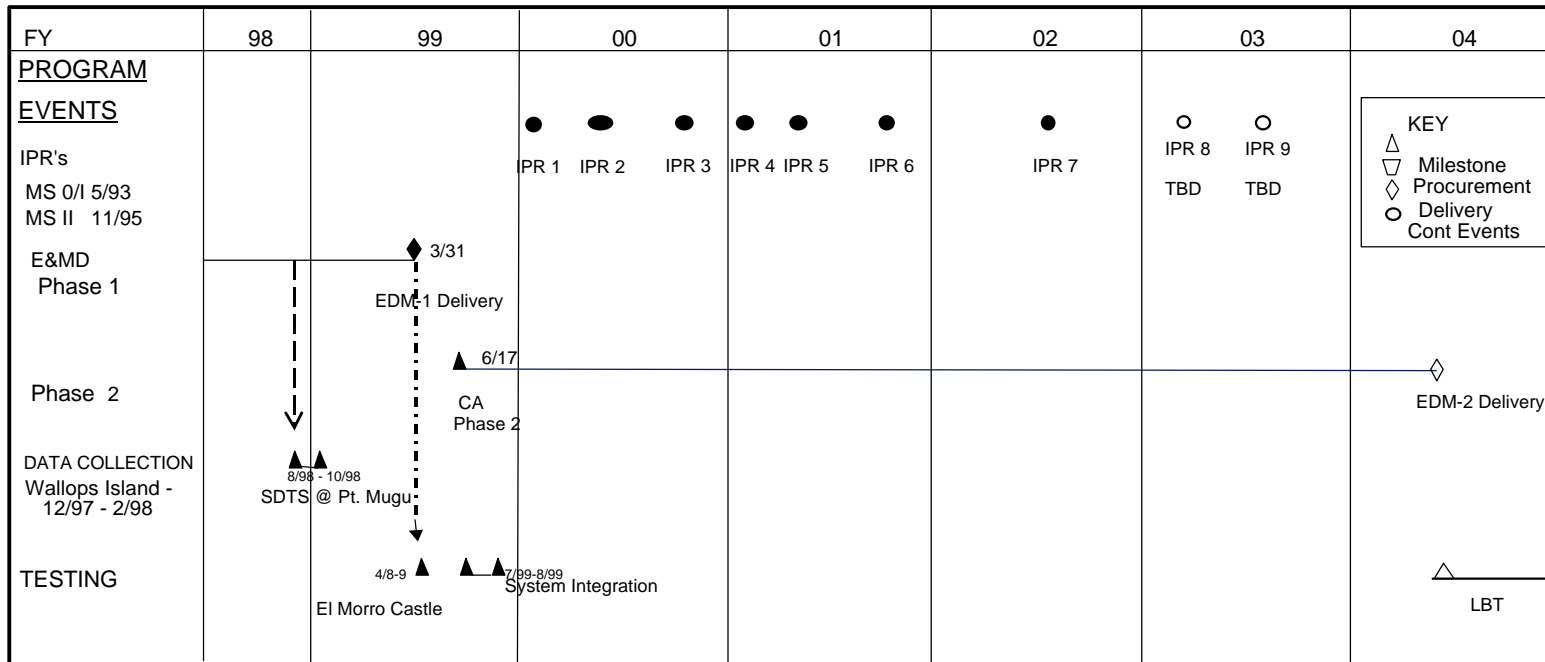
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**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 28 of 30)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA 5</b>	PROGRAM ELEMENT NAME AND NUMBER 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NAME AND NUMBER 22649 Infrared Search and Track (IRST)



R-1 Shopping List - Item No.

131

# UNCLASSIFIED



EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	33.075	29.367	23.076	31.032	8.962	8.255	8.345	8.492
20173 / NATO SEASPARROW	28.530	8.585	18.043	21.482	5.731	4.966	5.039	5.128
20167 / 5" Rolling Airframe Missile	4.545	10.513	5.033	9.550	3.231	3.289	3.306	3.364
29081 / PHALANX CIWS SEARAM	0.000	10.269	0.000	0.000	0.000	0.000	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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.

(U) ENGAGEMENT: Missile and 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>			PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>28.530</b>	<b>8.585</b>	<b>18.043</b>	<b>21.482</b>	<b>5.731</b>	<b>4.966</b>	<b>5.039</b>	<b>5.128</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project encompasses two (2) primary efforts to enhance ship self defense:

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); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability. FY03 introduces the development of the ESSM launching system. The Launching system (LS) will provide the CV/ CVN/ LHD class ships with an affordable light weight means of employing ESSM. The ESSM LS will replace the Navy's aging MK 29 GMLS by leveraging existing technology and canister launcher Production Programs under contract for other Countries / Ship's Commercial off the shelf. (COTS/NDI ) electronics.

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / 5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>	PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173</b>
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	27.354	2.718	3.187	2.126
RDT&E Articles Quantity				

Continued AEGIS S Band development. Conducted U.S. Unique DT-IIC/OT-IIC firings on SDTS and TECHEVAL/OPEVAL (DT-IIE/OT-IID) on AEGIS platforms. Correct engineering deficiencies identified as a result of TECHEVAL / OPEVAL. This provides for the U.S. share of Cooperative efforts associated with ESSM engineering studies and other development Initiatives.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	2.934	7.671	3.891
RDT&E Articles Quantity				

ESSM Launching System (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. Conduct restrained firings and DT/OT on the Self Defense Test ship in the third quarter of FY 04. Development completed in FY 05.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.845	7.781
RDT&E Articles Quantity				

Introduces Test and Evaluation of the ESSM Baseline Missile software for CV/CVNs. The CV/CVN/LHD Classes will see introduction of ESSM in FY 05 with the new ESSM Launcher. RNSSMS/SSDS MK 2. FOT & E will be required to validate Combat system effectiveness.

R-1 SHOPPING LIST - Item No. 132

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / 5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>	PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173</b>

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.176	2.933	5.340	7.684
RDT&E Articles Quantity				

FY 02: Completed development of computer program suite for the NSSMS MK 57 Mod 7 (ReArchitecture) for CVNs with SSDS Mk 2 Mod 1. Supported Integration testing with SSDS Mk 2 Mod 1 at Wallops Island. Enter CSIT for CVN 76 with SSDS Mk 2 Mod 0 at ICSTF. Addressed all deficiencies accruing from either Wallops Island or ICSTF testing.

FY 03/04/05: 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. Efforts scheduled for completion in FY 05.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b>	<b>PROJECT NUMBER AND NAME</b>			
<b>RDT&amp;E, N / BA-5</b>	<b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>	<b>NATO SEASPARROW/20173</b>			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		28.468	8.778	8.285	6.190
(FY04/05 PRES Controls)		28.530	8.585	18.043	21.482
Total Adjustments		0.062	-0.193	9.758	15.292
Summary of Adjustments					
SBIR/STTR Transfer		-0.340			
ESSM LAUNCHER DEVELOPMENT				2.900	
ESSM FOT&E				1.900	8.000
RNSSMS SSDS Integration				5.500	7.900
Programatic Adjustment		0.402	-0.1	-0.126	-0.145
INFLATION SAVINGS			-0.093	-0.416	-0.463
<b>Subtotal</b>		<b>0.062</b>	<b>-0.193</b>	<b>9.758</b>	<b>15.292</b>
Schedule:					
The ESSM schedule was initially delayed as a result of the Radome and relocation of the Rear Reference Antenna. These issues have been resolved and ESSM is proceeding thru the remaining tests with Aegis OPEVAL/TECHEVAL. Scheduled for 3rd Qtr FY 03.					
Technical:					
"Not Applicable."					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>				PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173</b>			
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
WPN BA-2 Other Missiles, Evolved SEASPARROW (ESSM) (230700)	41.3	42.7	112.8	102.6	114.6	142.3	134.4	148.4	945.7	1861.1
OPN BA-4 NATO SEASPARROW (523700, 523705) Related RDT&E: PE 0603609N (Conventional Munitions) PE 0604307N (AEGIS Combat System Engineering) PE 0604755N (K2178 Quick Reaction Combat Capability (QRCC))	10.5	40.5	32.8	57.1	79.5	62.2	68.2	62.5	CONT	CONT
<b>E. ACQUISITION STRATEGY: *</b>										
<p>ESSM is a directed sole source contract to Raytheon Missile Systems Company for LRIP, and upon successful completion of TECHEVAL/OPEVAL in FY 03, entering into Full Rate Production FY 04. Multi-year full rate production is the preferred approach for the NATO SEASPARROW Consortium.</p> <p>The ESSM Launcher will be a Full and open Competition Contract restricted to U.S. Prime Contractors who have Produced and delivered to the fleet Vertical Launching Systems.</p>										
<b>F. MAJOR PERFORMERS:</b>										
<ol style="list-style-type: none"> <li>1. Raytheon Systems Co. Tuscon 10/02, 11/04 ESSM Testing/ Engineering support</li> <li>2. Competitive contract - ESSM Launcher 02/03, 11/03, 1/05</li> <li>3. Naval Air Weapons Center China Lake, Point Mugu CA - Missile TDA supporting Development/Testing Funding under SEATASKs to field activities 10/02, 10/03, 10/04</li> <li>4. Naval Surface Warfare Center - Port Hueneme CA., Dahlgren Va - provide ISEA support to ESSM in development testing. Dahlgren - Performs safety analysis/Development testing. Funding issued under SEATASKs to field activities 10/02, 10/03, 10/04</li> </ol>										

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>				SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			<b>NATO SEASPARROW/20173</b>					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	RAYTHEON	141.230	0.423	01/03			2.126	11/04	Continue	Continue	
		TDW	3.746								3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	46.706								46.706	46.706
Systems Engineering	VARIOUS	VARIOUS	22.622								22.622	22.622
ESSM Launching System	LC/CPAF	TBD	0.000	2.934	01/03	7.671	10/03	3.891	10/04	Continue	Continue	
NATO-Primary Hdwe Dev		RAYTHEON	30.627							0.000	30.627	30.627
Software development / Test		HUGHES/RAYTHEON	2.346			0.985	12/03	1.650	12/04		4.981	
Systems Engineering		VARIOUS	5.306								5.306	
SSDS Integration		RAYTHEON	0.000	2.105	01/03	5.340	12/03	7.781	10/04	Continue	Continue	
Subtotal Product Development			252.583	5.462		13.996		15.448		Continue	Continue	
Remarks:												
ESSM / NATO											0.000	
Integrated Logistics Support	WR	NSWC PHD	3.568								3.568	
Engr Support	WR	VARIOUS	3.895	0.300	10/02	0.300	10/03	0.325	10/04		4.820	
ESSM Launching System	WR	VARIOUS	0.000	0.100							0.100	
Integrated Logistics Support	WR	NSWC PHD	0.000			0.385	10/03			Continue	Continue	
Engr Support			0.000			0.195	10/03				Continue	
NATO-MK 91/SDSMS			0.000							Continue	Continue	
ENGR SUPPORT	WR	VARIOUS	5.617	0.200	10/02	0.300	10/03	0.325	10/04	Continue	Continue	
Integrated Logistics Support	WR	NSWC PHD	0.000	0.081	10/02			0.192	10/04	Continue	Continue	
Subtotal Support			13.080	0.681		1.180		0.842		Continue	Continue	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>			<b>NATO SEASPARROW/20173</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC CL	12.374								12.374	
SDTS/DT OT 11C	WR	PT Mugu	0.000								0.000	
OPEVAL/TECHEVAL	WR	VARIOUS(Corona, APL,Dalhgren,NSWC PHD)	5.694	0.745	01/03	0.849	11/03	3.005	11/04		10.293	
Developmental Test & Evaluation	WR	APL	0.000	0.295		0.435		0.523		Continue	Continue	
Developmental Test & Evaluation	WR	DALHGREN	0.000	0.150		0.200		0.223		Continue	Continue	
Subtotal T&E			18.068	1.190		1.484		3.751		Continue	Continue	
Remarks:												
ESSM-ENGR SPT	VARIOUS	VARIOUS	4.258	0.165	VARIOUS	0.240	VARIOUS	0.250	VARIOUS	Continue	Continue	
ESSM-PM SPT	VARIOUS	VARIOUS	0.498								0.498	
ESSM-LABOR	PD/WR		5.013	0.845	VARIOUS	0.855	VARIOUS	0.865	VARIOUS	Continue	Continue	
ESSM - TRAVEL	PD/WR		1.410	0.187	VARIOUS	0.200	VARIOUS	0.220	VARIOUS	Continue	Continue	
ESSM- MISC	VARIOUS	VARIOUS	2.035	0.005	VARIOUS	0.010	VARIOUS	0.020	VARIOUS	Continue	Continue	
NATO TRAVEL/MISC	VARIOUS	VARIOUS	1.483	0.050	VARIOUS	0.078	VARIOUS	0.086	VARIOUS	Continue	Continue	
Subtotal Management			14.697	1.252		1.383		1.441		Continue	Continue	
Remarks:												
Total Cost			298.428	8.585		18.043		21.482		Continue	Continue	
Remarks:												

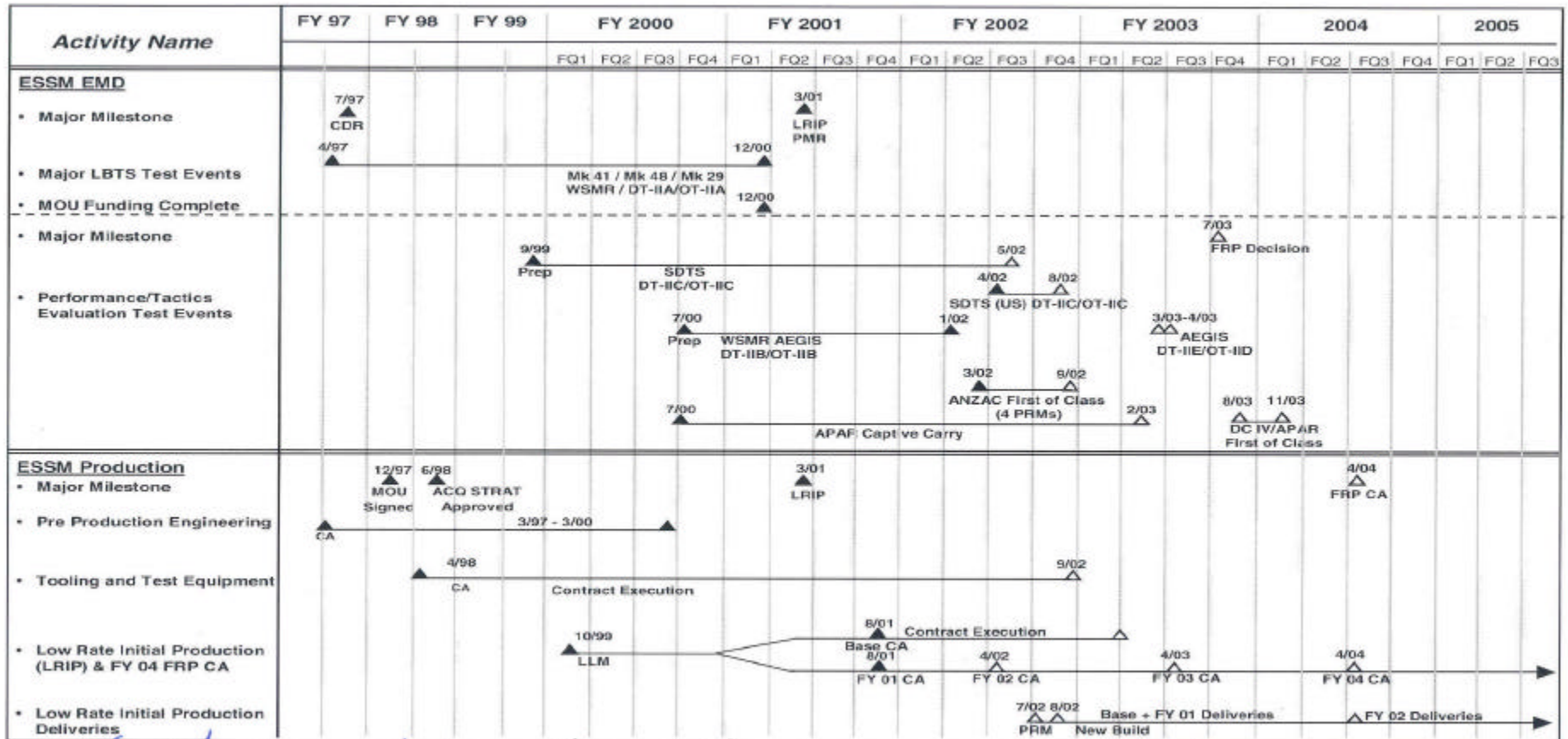
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>	PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173</b>	

**Master ESSM Program Schedule**

23 Apr 2002  
REV 10



*K. Graber* 4/29/02  
CAPT K. Graber, Project Manager

*Nilla H. Conelius*  
Director, Project Operations Division

*Thomas Z. Anderson*  
Director, ESSM Division

Rev 10.4/29/2002

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

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;BA-5</b>	PROGRAM ELEMENT <b>SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N</b>				PROJECT NUMBER AND NAME <b>NATO SEASPARROW/20173 (ESSM)</b>			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	Prior year							
System Design Review (SDR)	Prior year							
Milestone II (MSII)	Prior year							
Contract Preparation	Prior year							
Software Specification Review (SSR)	Prior year							
Preliminary Design Review (PDR)	Prior year							
System Development	Prior year							
Critical Design Review (CDR)	Prior year							
Quality Design and Build	Prior year							
Test Readiness Review (TRR)	Prior year							
Developmental Testing (DT-IIA)	Prior year							
Eng Dev Model (EDM) Radar Delivery - Lab	Prior year							
Software Delivery 1XXSW	Prior year							
Preproduction Readiness Review (PRR)	Prior year							
EDM Radar Delivery - Flt Related	Prior year							
Milestone C (MS C)	Prior year							
Operational Testing (OT-IIA)	Prior year							
Start Low-Rate Initial Production I (LRIP I)	Prior year							
Software Delivery 2XXSW	Prior year							
Developmental Testing (DT-IIB1)	Prior year							
Developmental Testing (DT-IIB2)	Prior year							
Start Low-Rate Initial Production II	3Q							
Operational Testing (OT-IIB)	2Q-4Q							
Developmental Testing (DT-IIC)	1Q-4Q							
Functional Configuration Audit (FCA)	2Q-4Q	1Q-2Q						
Low-Rate Initial Production I Delivery		3Q						
Technical Evaluation (TECHEVAL)		2Q						
Physical Configuration Audit	Prior year							
Operational Evaluation (OT-IIC) (OPEVAL)		3Q						
Low-Rate Initial Production II Delivery			3Q					
IOC			2Q					
Full Rate Production (FRP) Decision		4Q						
Full Rate Production Start			3Q					
First Deployment			2Q					

R-1 SHOPPING LIST - Item No. 132

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 10 of 26)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 20167 / ROLLING AIRFRAME MISSILE			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.545*	10.513	5.033	9.550	3.231	3.289	3.306	3.364
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, which provides an additional capability against helicopters, aircraft and surface craft, is a joint requirement of the U.S. and Federal Republic of Germany agreed to in a Memorandum of Agreement (MOA) signed by both parties. 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. Since FY03, \$8.0M has been added to FY05 for the purpose of integrating RAM on the FFG Ship Class.

\*FY02 Project Cost should reflect a Congressional Add of \$6.724 for a Total Program control of \$11.269. These funds are currently reflected under Program Element 0604755N, Project Numbers 29080 (Currently listed as Project Number K2190 (\$1.347) and 29081 (\$5.377). Funding was used to commence development and test of the SEARAM ECP to the RAM MK31 Guided Missile Weapon System.

R-1 SHOPPING LIST - Item N 132

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE	PROJECT NUMBER AND NAME 20167 / ROLLING AIRFRAME MISSILE

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
RAM Block 1 Testing	4.166	5.366	4.482	1.159
RDT&E Articles Quantity				

In FY02 funded Block 1 MOD 3 Contractor Test and Evaluation (CTE). In FY03-05, this line funds Block 1 FOT&E and government MOD 3 testing and analysis.

	FY 02	FY 03	FY 04	FY 05
RAM Block 1 Eng//Interface Support	0.062	0.580	0.165	8.391
RDT&E Articles Quantity				

This line supports on-going efforts in developing RAM interfaces with External Designation Systems (EDS). The \$8.0M plus-up in FY05 is for integration efforts on the FFG Ship Class.

	FY 02	FY 03	FY 04	FY 05
Improvement for Missile Deficiency	0.317	4.567	0.386	0.000
RDT&E Articles Quantity				

FY02 funding initiated the improvement of missile capability deficiency against emergent threat. FY03-04 funds the completion of this necessary improvement.

R-1 SHOPPING LIST - Item No. 132

# UNCLASSIFIED



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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE	PROJECT NUMBER AND NAME 20167 / ROLLING AIRFRAME MISSILE

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	4.775	10.750	5.311	2.100
Current BES/President's Budget	4.545	10.513	5.033	9.550
Total Adjustments	-0.230	-0.237	-0.278	7.450

Summary of Adjustments

RAM SPQ 9B SHIP SELF DEFENSE				2.000
RAM REALIGNMENT				6.000
Programmatic Adjustments	0.005	-0.020	-0.161	-0.357
Section 8123: Management Refo	-0.042			
FY2002 SBIR (dtd 5-15-02)	-0.076			
Sec. 313, PL 107-206: Revised	-0.010			
FY02 BTR (July-02)	-0.094			
Business Process Reform (8100)		-0.043		
Economic Assumptions (Sec 8135)	-0.013	-0.060		
NSWC PBD 426			-0.002	
NWCF Rates			0.001	0.013
Inflation Savings		-0.114	-0.116	-0.206
Subtotal	-0.230	-0.237	-0.278	7.450

Schedule:

RAM has been scheduled for installation on the FFG Ship Class. In FY05, \$8.0M has been added to integrate RAM on the FFG Ship Class.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 132

# UNCLASSIFIED

Exhibit R-2a, RDTEEN Project Justification  
(Exhibit R-2a, page 13 of 26)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>			PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 20167 / ROLLING AIRFRAME MISSILE				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
<b>OPN LINE 523800 (RAM)</b>	\$31.099	\$27.480	\$31.300	\$35.364	\$46.276	\$35.229	\$35.345	\$35.512	\$161.700	\$927.011
<b>WPN LINE 224200 (RAM)</b>	\$46.416	\$64.127	\$48.315	\$47.510	\$136.183	\$70.897	\$99.641	\$102.396	\$555.696	\$1,304.800
<b>E. ACQUISITION STRATEGY: *</b>										
RAM Block 1 MOD 3 Development and Testing FY2002-2005; Improvement of missile capability deficiency against emergent threat FY2002-2004.										
<b>F. MAJOR PERFORMERS: **</b>										
Raytheon Systems Company - Tucson, AZ - RAM Prime Contractor for Development and Contractor Test and Evaluation. Award Dates: FY03 - 11/02; FY04 - 11/03; FY05 - 11/04										
Naval Air Weapons Center, China Lake - China Lake, CA - Missile ISEA supporting RAM development and testing. Award dates are N/A, since funding will be provided under NAVSEA Seatask to field activity.										
Naval Surface Warfare Center, Port Hueneme - Port Hueneme, CA - Launcher ISEA supporting development, testing, integration and test ranges. Award dates are N/A, since funding will be provided under NAVSEA Seatask to field activity.										

R-1 SHOPPING LIST - Item No. 132

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604756N SHIP SELF DEFENSE			20167 / ROLLING AIRFRAME MISSILE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Raytheon Co, Tucson AZ		4.330	11/02	0.386	11/03	0.000		Continuing	Continuing	
Block 1 MOD 3 Interface Spt	SS/CPFF	Raytheon Co, San Diego CA		0.000		0.000		0.875	11/04	Continuing	Continuing	
Block 1 MOD 3 Interface Spt		JHU/APL		0.090		0.050		0.375		Continuing	Continuing	
Block 1 MOD 3 Interface Spt		NSWC/PHD		0.000		0.000		6.539		Continuing	Continuing	
Block 1 MOD 3 Eng		NAWC/China Lake		0.201		0.036		0.375		Continuing	Continuing	
Block 1 MOD 3 IR Spt		NRL		0.175		0.054		0.175		Continuing	Continuing	
Block 1 MOD 3 Sys Safety		NSWC/DD		0.114		0.025		0.056		Continuing	Continuing	
Miscellaneous											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	4.910		0.551		8.395		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
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: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-05</b>			0604756N SHIP SELF DEFENSE				20167 / ROLLING AIRFRAME MISSILE					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E/FOT&E/CTE	SS/CPAF	Raytheon Co, Tucson AZ		0.750	11/02	0.500	11/03	0.000	11/04	Continuing	Continuing	
DT&E/OT&E		China Lake CA, PHD CA		0.000		3.826		0.500		Continuing	Continuing	
FOT&E		China Lake CA, PHD CA		4.700		0.000		0.000		Continuing	Continuing	
CTE Support		NSWC/PHD CA		0.000		0.000		0.000		Continuing	Continuing	
Miscellaneous		Various		0.000		0.000		0.500		Continuing	Continuing	
											0.000	
											0.000	
Subtotal T&E			0.000	5.450		4.326		1.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel				0.153		0.156		0.155		Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.153		0.156		0.155		Continuing	Continuing	
Remarks:												
Total Cost			0.000	10.513		5.033		9.550		Continuing	Continuing	
Remarks:												

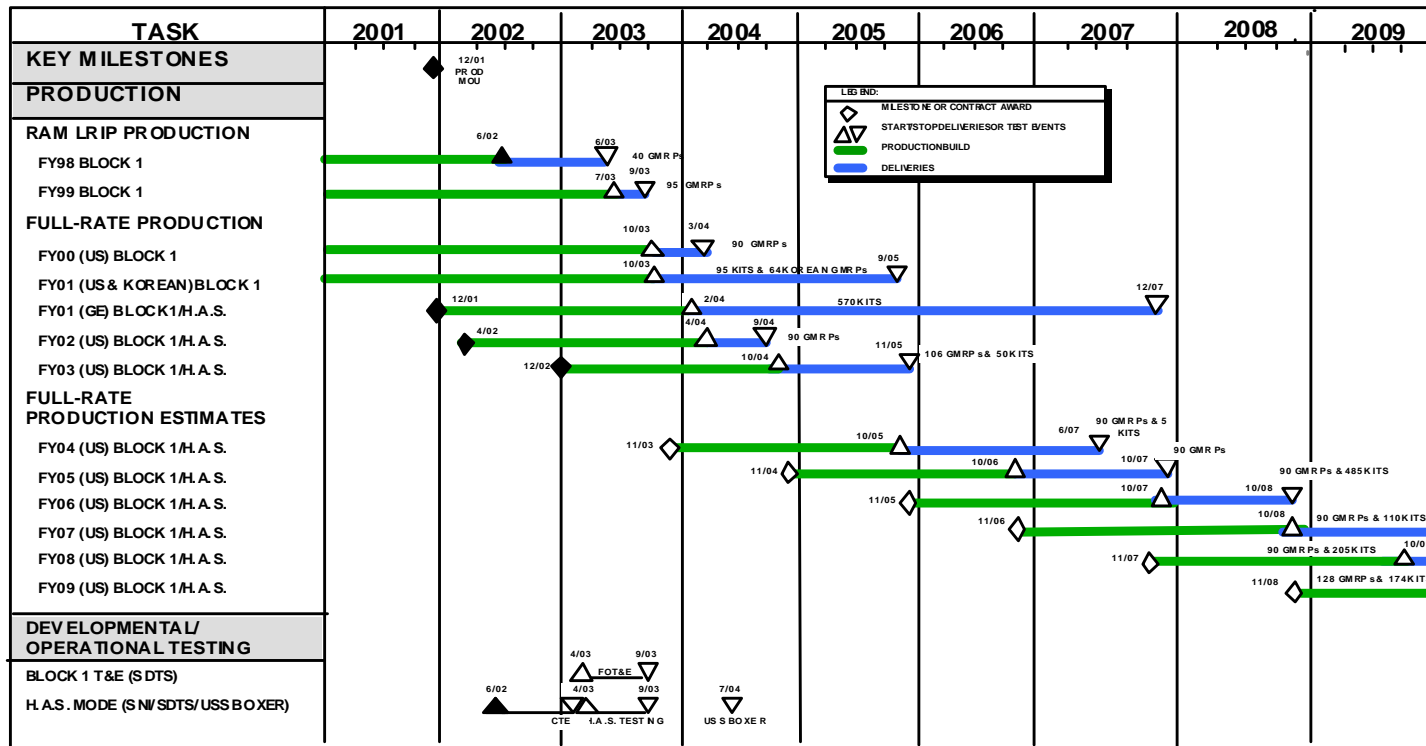
R-1 SHOPPING LIST - Item No. 132

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N	NATO SEASPARROW/20173	

## Rolling Airframe Missile Program Plan



R-1 SHOPPING LIST - Item No. 132

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>		PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE			PROJECT NUMBER AND NAME 29081 / PHALANX CIWS SEA RAM			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		<b>10.269</b>						
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The purpose of this ECP effort is to combine the PHALANX CIWS radar with the Rolling Airframe Missile (RAM) Block 1 Missile System. The overall SEARAM strategy is to field a low-risk-development cost system utilizing the proven capabilities and infrastructure of the RAM and PHALANX CIWS systems. This U.S. Navy SEARAM development leverages the successful demonstration by the United Kingdom of an industry prototype system aboard the HMS York. The SEARAM ORDALT ECP will provide improved detection and performance capabilities in a stand-alone self-defense system that will defeat the near-term, stressing Anti-Ship Cruise Missile (ASCM) threats. The FY03 Congressional Plus-up continues the U.S. Navy system/software engineering of the SEARAM ORDALT ECP.

FY03 Project reflects a Congressional Add of \$ 10.269M under Program Element 0604756N Project Number 29081.

R-1 SHOPPING LIST - Item No. 132

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 19 of 26)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE	PROJECT NUMBER AND NAME 29081 / PHALANX CIWS SEA RAM

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
SEARAM Development		10.269		
RDT&E Articles Quantity				

FY03 funding used to continue development of the SEARAM ECP for the RAM MK31 Guided Missile Weapon System.

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 132

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE	PROJECT NUMBER AND NAME 29081 / PHALANX CIWS SEA RAM
--	--	---

**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	0.000	10.269	0.000	0.000
Total Adjustments	0.000	10.269	0.000	0.000
Summary of Adjustments				
Phalanx CIWS SEARAM Ordalt Dev		10.500		
Business Process Reform (Sec 8100)		-0.042		
Economic Assumptions (Sec 8135)		-0.059		
Programmatic adjustment		-0.019		
Inflation Savings		-0.111		
Subtotal	0.000	10.269	0.000	0.000

Schedule:

"FY03 Congressional Plus-up continues development of SEARAM ECP to RAM MK31 Guided Missile Weapon System.

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. 132

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>			PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE			PROJECT NUMBER AND NAME 29081 / PHALANX CIWS SEA RAM				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN LINE 523800 (RAM)	\$31.099	\$27.480	\$31.300	\$35.364	\$46.276	\$35.229	\$35.345	\$35.512	\$161.700	\$927.011
WPN LINE 224200 (RAM)	\$46.416	\$64.127	\$48.315	\$47.510	\$136.183	\$70.897	\$99.641	\$102.396	\$555.710	\$1,304.800
<b>E. ACQUISITION STRATEGY:</b>										
SEARAM Development and Testing										
<b>F. MAJOR PERFORMERS:</b>										
Raytheon Systems Company - Tucson, AZ - RAM Prime Contractor for Development. Award Date: FY03 - 2/03.										

R-1 SHOPPING LIST - Item No. 132

**UNCLASSIFIED**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-05</b>			0604756N SHIP SELF DEFENSE-ENGAGE			29081 / PHALANX CIWS SEA RAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Raytheon, Tucson AZ		10.269	02/03					0.000	10.269	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering										0.000	0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	10.269		0.000		0.000		0.000	10.269	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 132

**UNCLASSIFIED**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-05			0604756N SHIP SELF DEFENSE-ENGAGE			29081 / PHALANX CIWS SEA RAM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	10.269		0.000		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 132

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R-4

**CLASSIFICATION:**

EXHIBIT R4, Schedule Profile																								DATE: <b>August 2002</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-05</b>										PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE										PROJECT NUMBER AND NAME 29081 / PHALANX CIWS SEA RAM												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
System Engineering*																																

Contract Modification  
▲



R-1 SHOPPING LIST - Item No. 132



EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)
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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>41.350</b>	<b>43.970</b>	<b>35.508</b>	<b>28.566</b>	<b>15.819</b>	<b>11.874</b>	<b>20.762</b>	<b>20.474</b>
K0954/Shipboard EW Improvements	<b>7.068</b>	<b>26.452</b>	<b>33.228</b>	<b>26.074</b>	<b>14.787</b>	<b>10.829</b>	<b>19.700</b>	<b>19.393</b>
K2190 NULKA	<b>4.217</b>	<b>0.992</b>	<b>2.280</b>	<b>2.492</b>	<b>1.032</b>	<b>1.045</b>	<b>1.062</b>	<b>1.081</b>
K2441 Nulka Decoy Improvements		<b>4.499</b>						
K9243 Radar Titles*		<b>0.977</b>						
K9244 Surface Ship EW Improvements		<b>2.738</b>						
K9245 Improved Control and Display (ICAD)		<b>8.312</b>						
K2309/AIEWS	<b>30.065</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

**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.

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.

\*Project Unit K9243 reflects a Congressional Increase for Outlaw Bandit.

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**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)
<p><b>(U) DETECTION:</b> 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) project. 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><b>(U) ENGAGEMENT:</b> 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>	

R-1 SHOPPING LIST - Item No. 133

**UNCLASSIFIED**

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			PROJECT NUMBER AND NAME K0954/K9244/K9245 Shipboard EW Improvements			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>7.068</b>	<b>37.502</b>	<b>33.228</b>	<b>26.074</b>	<b>14.787</b>	<b>10.829</b>	<b>19.700</b>	<b>19.393</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The Surface Electronic Warfare Improvement Program (SEWIP) is an evolutionary acquisition and spiral development program of Block upgrades to the AN/SLQ-32(V) family of passive and active shipboard electronic warfare (EW) systems, which will replace the AN/SLY-2(V) Advanced Integrated Electronic Warfare System (AIEWS) program. AIEWS was cancelled in April 2002 due to cost growth and development delay issues. SEWIP will provide necessary EW capabilities and will incorporate: technology advances as they become available to provide incremental upgrades in capability and improvements in performance; continuous technology reviews; potential alternate element and component surveys; and, ongoing Cost As an Independent Variable (CAIV) efforts will be employed throughout. Threat system technologies will be examined and compared against program planning to achieve best capability within available resources.

The initial SEWIP plan (Block 1, ACAT II) is segmented into 3 sub-blocks: 1A, 1B and 1C. Block 1A is for SLQ-32 sustainment by updating the display console and display/pulse-processing computers, allowing the system to more quickly identify threats and better display the information to the operator. The new display console and processing computers will partially open the system architecture to support subsequent block upgrades. Block 1A is planned to begin at-sea testing in FY04 and to go into production in FY05. Block 1B will add Specific Emitter Identification (SEI) via integration of stand-alone Small Ship Electronic Support Measures (SS ESM), and display of combat systems tracks to the operator to improve threat correlation and situational awareness. Block 1B is planned to begin at-sea testing in FY05. Block 1C will add initial High Gain High Sensitivity (HGHS) capability to SEI, and will allow the operator to launch both Nulka and passive on combat systems tracks, thereby improving effectiveness. Block 1C is planned to begin at-sea testing before the end of the FYDP.

The next Block upgrade (Block 2) will lay the groundwork for more significant improvements; including a major receiver upgrade to improve system sensitivity, provide precision measurement of Angle of Arrival, and improve Electromagnetic Interference (EMI) immunity. Block 3 will significantly improve the Electronic Attack (EA) capabilities of the SLQ-32; Block 4 will add an Infrared (IR) jamming capability.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	PROJECT NUMBER AND NAME K0954/K9244/K9245 Shipboard EW Improvements

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	3.256	3.089	2.407
RDT&E Articles Quantity				

The Surface Electronic Warfare Improvement Program (SEWIP) is an evolutionary acquisition and spiral development program of Block upgrades to the AN/SLQ-32(V) family of passive and active shipboard electronic warfare (EW) systems. The program will incorporate technology advances as they become available to provide incremental upgrades in capability and improvements in performance; continuous technology reviews, potential alternate element and component surveys, and ongoing Cost As an Independent Variable (CAIV) efforts. Threat system technologies will be examined and compared against program planning to achieve best capability within available resources to rapidly deliver affordable, sustainable capability to the warfighter that meets the warfighter's needs.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.402	16.646	9.445	1.900
RDT&E Articles Quantity				

Block 1A includes development of Electronic Support Enhancements (ESE) and Improved Control and Display (ICAD). This enhanced functionality increases Anti-Ship Missile Defence (ASMD) capabilities, allowed for proper identification of Anti Ship Missile threats, and increased the system's ability to handle the significantly increased emitter density. ICAD will provide the tools necessary to significantly improve tactical performance and battle readiness by processing information rapidly through predetermined automation routines. Integrate and test. Conduct preliminary and operational assessment at-sea for integrated ESE and ICAD (Block 1A) Transition ESE and ICAD to production. Prepare for a limited rate production decision for ICAD. Lab/Field activity support included.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	10.654	7.750	6.409
RDT&E Articles Quantity				

The Systems Integrator is the lead activity responsible for the overall technical design, technical coordination, integration, and testing of the SEWIP program. The System Integrator is responsible for developing the technical roadmap for the SEWIP program, including the detailed technical plan for each block upgrade. The System Integrator will perform any required CAIV analysis, develop technical performance requirements, perform system level functional allocations, coordinate the execution of the block upgrades. The System Integrator is responsible for integrating the portions of the system and performing element testing as well as system level performance testing.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	PROJECT NUMBER AND NAME K0954/K9244/K9245 Shipboard EW Improvements

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	2.945	4.219	3.839
RDT&E Articles Quantity				

Block 1B development includes Specific Emitter Identification (SEI) by federating the Small Ship ESM (SSESM) system with SEWIP. It also includes the transfer of CS tracks to the EW system to enhance the display of combat systems tracks in order to improve classification and situational awareness. Task include the Integration and test Block 1B efforts. Transition Block 1B to production. Lab/Field activity support included. Development for related CS track data usage, RDDDL, HGHS, DPU/DTU, ICAD Upgrades and LAMPS Interface Upgrades.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.500	5.097	7.734
RDT&E Articles Quantity				

Block 1C includes the incorporation of High Gain High Sensitivity (HGHS) capability, the ability for the operator to launch Nulka on combat systems tracks, the adaptation of SEWIP to work on carriers, and the modifications of ICAD to operate with on-board active countermeasures. RDDDL development, ILS engineering, CONOPS and related engineering development are a party of Block 1C. ICAD Phase II, requirements definition, specifications, and development, DPU/DTU upgrades for V4 ships. These efforts include CONOPS development, specification development, contracts preparation, testing and materials., DDI refresh, PW measurement enhancements. LAMPS interface upgrade concept development will be included. IRS/IDD development, SW development and factory testing are also included. Lab/Field activity support included.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.666	3.501	3.628	3.785
RDT&E Articles Quantity				

Program and Technical Management of the SEWIP program includes contract management, field activity management, risk management, SBIR employment, M&S, cost estimates, development of program requirements, acquisition, logistics and other documentation (ORD, TEMP, AP, SAMP, CMP, ILSP, NTSP, PLCCE, APB, etc) to meet statutory and regulatory requirements.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	PROJECT NUMBER AND NAME K0954/K9244/K9245 Shipboard EW Improvements			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		2.288	1.194	0.511	0.409
Current BES/President's Budget		7.068	37.502	33.228	26.074
Total Adjustments		4.780	36.308	32.717	25.665
Summary of Adjustments					
SBIR/STTR Transfer		-0.052			
Congressional Increases			11.300		
Congressional Reductions		-0.011	-0.144		
Program Adjustments		4.843	25.559	34.000	26.500
Inflation			-0.407	-0.758	-0.555
Minor Pricing Adjustments				-0.525	-0.280
Subtotal		4.780	36.308	32.717	25.665
Schedule:					
See attached schedule.					
Technical:					
See attached Schedule					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	PROJECT NUMBER AND NAME K0954/K9244/K9245 Shipboard EW Improvements
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BA-2 AN/SLQ-32(V) (2312)	1.929	1.819	19.429	18.929	22.295	28.248	25.486	21.635	cont.	cont
RDT&E,N BA-5, AIEWS (0604755N)	2.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.018
O&M,N AN/SLQ-32 (12CR0/1C2C)	1.218	1.375	1.445	1.477	1.507	1.540	1.577	1.615	cont	cont
O&M,N AN/SLQ-32 (14DR0/1D4D)	6.331	8.74	8.05	8.222	7.269	7.201	7.331	7.504	cont	cont

**E. ACQUISITION STRATEGY:**

Shipboard EW Improvement Program( SEWIP) will accomplish block upgrades based on integrating technology advances and added functional capabilities in an incremental fashion. Each block will be developed and contracted in an individual yet coordinated and overlapping fashion. Blocks will be fielded on ships to meet battle group schedule requirements and make best use of available improvements and resources.

**F. MAJOR PERFORMERS:**

- Northrop Grumman PRB (Compete) Goleta, CA - ESE development contract - 7/02
- DSR Fairfax, VA - ICAD development contract - 7/02; Systems Integration Contract - 01/03
- Lockheed Martin/Eagan MN - Q-70 console modifications
- Naval Research Laboratory DC - Technical support for development and testing efforts
- Naval Surface Warfare Center Dahlgren VA - Scenario/Library Testing of ESE, support for all DT/OT events
- Naval Surface Warfare Center Crane IN - Lead for HW/SW ESE development, support for all DT/OT events, system engineering support for ESE and ICAD

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL			K0954/K9244/K9245 Shipboard EW Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development			151.420								151.420	
ESE Development	SS / FFP	Northrop Grumman	2.950	2.277	08/02	0.300	10/03			CONT	CONT	TBD
ESE Development	SS / CPF	Northrop Grumman								TBD	TBD	TBD
ICAD Development-SBIR Phase III	SS / CPA	DSR	0.973	5.171	06/02					TBD	TBD	TBD
System Integrator	SS / CPA	DSR		10.654	01/03	7.750		6.409		TBD	TBD	TBD
SSESM rehost/HGHS		NRL								TBD	TBD	N/A
Q-70 Mods		PMS 440		1.000	01/03					TBD	TBD	
Blk 1B Deveop	CPAF	TBD				2.889		1.739		CONT	CONT	
Blk 1C Development	Various	Various				3.297		6.059			9.356	
											0.000	
Award Fees											0.000	
Subtotal Product Development			155.343	19.102		14.236		14.207		Cont	Cont	
Remarks:												
Integrated Logistics Support	Various	Various	0.610	0.916		2.553		1.085			5.164	
Systems Engineering	TBD	Various	1.384	2.518		1.770					5.672	
Blk 1B Engr Services	Various	Various		2.895		1.230		2.000			6.125	
Tech Engrg Svcs, Studies & Analyses	Various	Various	0.557	1.668		1.600		1.700		CONT	TBD	
Blk1C Engr Services	Various	Various		0.500		1.800		1.650			TBD	
Miscellaneous	Various	Various										
Subtotal Support			2.551	8.497		8.953		6.435		Cont	Cont	
Remarks:												

R-1 SHOPPING LIST - Item No. 133

# UNCLASSIFIED

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

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			K0954/K9244/K9245 Shipboard EW Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	8.958								8.958	
Block 1A Test Planning/T&E Events	Various	Various		4.620	01/03	4.985	11/03	1.900	-	CONT	TBD	
Block 1B Test Planning/T&E Events	Various	Various		0.000		0.000		0.025		CONT	TBD	
Block 1C Test Planning/T&E Events										CONT	TBD	
											TBD	
											0.000	
											0.000	
Subtotal T&E			8.958	4.620		4.985		1.925		CONT	CONT	
Remarks:												
Program Management Support	Various	Various	21.785	0.732		0.300		0.300		CONT	CONT	
Government Engineering Support	WX	NSWC/CD & DD, NRL	0.000	3.256		3.089		2.407		CONT	CONT	
Program Management Support	WX	NSWC/CD & DD, NRL	0.454	1.195		1.265		0.700		CONT	CONT	
Travel			0.005	0.100		0.400		0.100		CONT	CONT	
Subtotal Management			22.244	5.283		5.054		3.507		CONT	CONT	
Remarks:												
Total Cost			189.096	37.502		33.228		26.074		CONT	CONT	
Remarks:												







# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			PROJECT NUMBER AND NAME K2190/K2441/Nulka Decoy			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.217	5.491	2.280	2.492	1.032	1.045	1.062	1.081
RDT&E Articles Qty								

**A. 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 that 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 NULKA is undergoing a P3I program to: integrate the Mk 53 Decoy Launching System with Ship Self Defense System (SSDS) and the ship combat systems, maintain electromagnetic compatibility with shipboard emitters, integrate with future electronic warfare system upgrades, and upgrade of the Inertial Measurement Unit (IMU). It is critical to maintain a continuous RDT&E budget for payload and decoy system 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	PROJECT NUMBER AND NAME K2190/K2441/Nulka Decoy
---	---	--

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.990			
RDT&E Articles Quantity				

Start development of Radar Designed Decoy Launch (RDDL) capability.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.227	1.000	1.300	1.500
RDT&E Articles Quantity				

Start and continue development of anti-tampering system for payload.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.000	0.980	
RDT&E Articles Quantity				

Inertial Measurement Unit (IMU) flight control unit upgrade.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KIL	PROJECT NUMBER AND NAME K2190/K2441/Nulka Decoy

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				0.992
RDT&E Articles Quantity				

Develop Decoy Launch Processor (DLP)/Decoy Launch System (DLS) technology refresh.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.491		
RDT&E Articles Quantity				

NULKA decoy subsystem/integration and improvements.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)	PROJECT NUMBER AND NAME K2190/K2441/Nulka Decoy			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.526	1.015	1.083	1.080
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)		4.217	5.491	2.280	2.492
Total Adjustments		3.691	4.476	1.197	1.412
Summary of Adjustments					
Minor Pricing Adjustments		-0.049	-0.064	-0.051	-0.034
Program Adjustments		0.940		1.300	1.500
Inflation			-0.060	-0.052	-0.054
Congressional increases		2.800	4.600		
Subtotal		3.691	4.476	1.197	1.412
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 133

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME K2190/K2441 NULKA DECOY				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN: Anti-Ship Missile Decoy System/5530 (In Millions)	26.923	32.675	44.757	56.311	56.937	58.229	59.352	60.736	231.794	752.552
Spares	0.200	0.200	0.152	0.158	0.180	0.248	0.073	0.000	Continuing	TBD
OMN: 14DRO, 1D4D	3.047	1.990	2.291	2.776	2.755	2.833	2.900	2.970	Continuing	TBD*
* Total Cost does not include FY01 and prior program costs of \$124,829										
<b>E. ACQUISITION STRATEGY:</b>										
Not Applicable										
<b>F. MAJOR PERFORMERS:</b>										
NSWC Crane , IN Product Development										
NSWC Dahlgren, VA Product Development										
NRL Washington, DC Product Development										
Sippican Inc, Marion, MA Product Development										
BAeA, Australia Product Development										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL			K2190/K2441/Nulka Decoy						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RC	NSWC Crane, IN	1.000	2.373							3.373	
	RC	Sippican	1.782								1.782	
	MIPR	BAES	0.100	0.600		1.300	Nov-04	1.500	Nov-05	Continuing	Continuing	
Ship Suitability											0.000	
Systems Engineering	WX	NSWC Crane	0.223	0.231		0.209		0.210		Continuing	Continuing	
Systems Engineering	WX	NWAD China Lake		0.050								
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			3.105	3.254		1.509		1.710		Continuing	Continuing	
Remarks:												
Development Support	WX	NRL	0.375	0.765		0.257		0.263		Continuing	Continuing	
Software Development	WX	NSWC Dahlgren	0.557	1.205		0.209		0.210		Continuing	Continuing	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.932	1.970		0.466		0.473		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 133

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 17 of 24)

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)									DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604757N SHIP SELF DEFENSE (ENGAGE: SOFT KILL)			K2190/K2441/Nulka Decoy						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	cc/cpff	Anteon, Arlington, VA	0.076	0.185	10/02	0.199	10/03	0.202	10/04	Continuing	Continuing	
Travel			0.104	0.082		0.106		0.107		Continuing	Continuing	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.180	0.267		0.305		0.309		Continuing	Continuing	
Remarks:												
Total Cost			4.217	5.491		2.280		2.492		Continuing	Continuing	
Remarks:												



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0604757N SHIP SELF DEFENSE								PROJECT NUMBER AND NAME K2190/K2441 NULKA DECOY																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>								Training Site Operational ▲								FFG Install ▲																
<b>Production Milestones</b>																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
Deliveries																																

R-1 SHOPPING LIST - Item No 133

# UNCLASSIFIED



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)			PROJECT NUMBER AND NAME K9243/Radar Tiles			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.977</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

(u) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: OUTLAW BANDIT is a ship signature reduction program, applying radar absorbent material (RAM) to selected areas of a ship's equipment, superstructure, and weapons systems. PCMS enhances ship survivability when used in conjunction with AN/SLQ-32 AND Decoys.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTRO	PROJECT NUMBER AND NAME K9243/Radar Tiles

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.977	0.000	0.000
RDT&E Articles Quantity				

Develop an advanced radar absorbing material

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>August 2002</b> <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL)	PROJECT NUMBER AND NAME K9243/Radar Tiles			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY2003	FY2004	FY2005	FY2006
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	0.977	0.000	0.000
Total Adjustments		0.000	0.977	0.000	0.000
Summary of Adjustments					
Minor Pricing Adjustments		0	-0.006		
Economic Assumptions		0	-0.006		
Inflation		0	-0.011		
Congressional increases		0	1		
Subtotal		0	0.977	0	0
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604755N SHIP SELF DEFENSE (DETECT & CONTROL	PROJECT NUMBER AND NAME K9243/Radar Tiles
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
O&M,N ELECTRONIC WARFARE PE 0728827 OUTLAW BANDIT		2.618	1.358	1.427	1.442	1.588	1.669	1.704		

**E. ACQUISITION STRATEGY:** n/a

**F. MAJOR PERFORMERS:** n/a

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0933 Medical / Dental Equipment Development	9,164	62,302	5,593	6,124	6,298	7,600	7,744	7,889	Continue	Continue
M2650 Voice Instructional Devices (VID)	5,821	0	0	0	0	0	0	0	0	5,821
M2896 Military Dental Research	2,761	2,933	0	0	0	0	0	0	0	5,694
M2897 High Resolution Digital Mammography	1,443	0	0	0	0	0	0	0	0	1,443
M2795 Coastal Cancer Control (MUSC)	3,396	4,452	0	0	0	0	0	0	0	7,848
Total	22,585	69,687	5,593	6,124	6,298	7,600	7,744	7,889	Continue	Continue

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 1 of 20)

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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

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.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 2 of 20)

UNCLASSIFIED



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FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

PROGRAM CHANGE FOR TOTAL PE:

	<u>FY 2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY 2009</u>
(U) FY 2003 President's Budget	5,455	7,154	7,270	7,461	7,609	7,760	7,907	8,058
(U) Adjustments from PRESBUDG:								
VOICE INSTRUCTIONAL DEVICES (VID)	6,000							
COASTAL CANCER CONTROL	3,500	4,500						
MILITARY DENTAL RESEARCH	2,800	3,000						
HIGH RESOLUTION DIGITAL MAMMOGRAPHY	1,500							
SONARMAN EARCOM TECHNOLOGY	500							
NAVAL BLOOD RESEARCH LAB	1,000	1,500						
NAVAL MEDICAL RES CTR RADIATION	2,500							
Section 8123 : Management Reform	-205							
FY 2002 SBIR (dtd 5-15-02)	-245							
Post- Production R&D Continuation			-854	-1,080	-1,183			
Sec. 313, PL 107-206: Revised	-50							
FY02 BTR (July-02)	-108							
Business Process Reform (SEC. 813		-285						
Economic Assumptions (SEC. 813	-62	-400						
IT Cost Growth (SEC. 8109)		-131						
Biomedical Research Imaging Co		3,500						
Center for Disaster Management		2,975						
Community Hospital Telehealth		1,000						
Institute of Tech Biomedical Research		1,000						
Low Cost Retractable Needle		1,000						

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 3 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

Medical Procedures Reference Tool		2,600						
Minimally Invasive Surgical Techniques		1,200						
National Bone Marrow Program		28,900						
	<u>FY 2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY 2009</u>
National Center for Collaboration in Medicine		2,250						
Rural Health		5,780						
Treatment of Radiation Sickness		3,400						
Vectored Vaccine Research Program		1,500						
Non-S&T R&D Offset			-597					
PSD203 ACTD offsets			-97	-125				
Inflation Savings		-756						
PBD-604 Nonpay Purchase Inflation			-99					
PBD-604 Nonpay Inflation			-30					
PBD 604 FY05/09 Inflation				-132	-128	-160	-163	-169
(U) FY 2004 President's Budget	22,585	69,687	5,593	6,124	6,298	7,600	7,744	7,889

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 4 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0933 Medical / Dental Equipment Development	9,164	62,302	5,593	6,124	6,298	7,600	7,744	7,889	Continue	Continue

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 ACCOMPLISHMENTS:

- (U) (\$1,500) DNA VACCINE TECHNOLOGY: Completed studies of 9 plasmid (not 15 plasmid) vaccine in healthy adult subjects; completed clinical trials of new formulation of DNA vaccines designed to improve antibody responses. Project completed.
- (U) (\$1,530) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Complete development of additional lab and flight systems; completed unmanned aerial vehicle and fixed demonstrations and evaluations; continued rotary and fixed wing suits and pitch/roll algorithms; continued operational testing of suits.
- (U) (\$75) VIRTUAL FIT CHECK SYSTEM: Completed all data collection and analysis, and writing final report.

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 5 of 20)

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

- (U) (\$100) CERTIFICATION OF MEDICAL ANCILLARY EQUIPMENT FOR USE IN HYPERBARIC CHAMBERS: Completed 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; writing final report.
- (U) (\$243) EVALUATION OF FIELD-BASED PROCEDURES FOR SCREENING DIVERS' AIR: Completed field testing of gas analysis equipment; writing final report.
- (U) (\$24) SEA TRIALS OF NEW SUBMARINE WATCHSTANDING SCHEDULE: Initiated a study to evaluate the effectiveness of a new watchstanding schedule on submariner performance; arranged for testing new schedule on two deployed submarines.
- (U) (\$179) UNDERWATER AND DIVE STATION WORK-SITE NOISE SURVEYS: Initiated 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) (\$80) FEASIBILITY OF USING HAND-HELD PERSONAL DIGITAL ASSISTANTS IN HYPERBARIC ENVIRONMENTS: Completed a 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) (\$872) MERCURY ABATEMENT IN DENTAL WASTEWATER: Initiated and completed test and evaluation of several commercial mercury abatement systems for use in Navy Dental Treatment Facilities
- (U) (\$400) TACTICAL MEDICAL COORDINATING SYSTEM: Initiated field testing of a radio frequency device to track the location of casualties through the medical evacuation system. Effort being coordinated with other IM/IT initiatives and structured to be compatible with TMIP.
- (U) (\$250) SOF MOBILE PERFORMANCE EVALUATION TEST BATTERY: Initiated 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) (\$0) ADVANCED FROZEN BLOOD PROCESSOR: Project not funded; BUMED never received research protocol from performer. Plan was to initiate clinical testing of an advanced frozen red blood cell processor that would prolong the shelf life of red cells after they have been thawed from 24 hours to 2 weeks.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 6 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

- (U) (\$2,456) NAVAL MEDICAL RESEARCH CENTER RADIATION EXPOSURE TREATMENT: Initiated studies to optimize the ability to expand blood forming stem cells in culture outside the body.
- (U) (\$966) NAVAL BLOOD RESEARCH LABORATORY: Conduct studies to obtain FDA approval use of platelets that have been frozen for up to five years.
- (U) (\$489) SONARMAN EARCOM TECHNOLOGY: Initiated development of a noise-reducing sealed earplug with acoustic and electronic systems that interface with wireless/wired communications systems to facilitate communications in noisy environments.

2. (U) FY 2003 PLAN:

- (U) (\$639) TACTICAL MEDICAL COORDINATION SYSTEM: Continue field testing of a radio frequency device (DogTag) to track the location of casualties through the medical evaluation system.
- (U) (\$340) SOF MOBILE PERFORMANCE EVALUATION TEST BATTERY: Continue field testing of a refined tool used for determining physical and cognitive performance decrements in special operations forces that result from fatigue or environmental exposure.
- (U) (\$230) UNDERWATER AND DIVE STATION WORK-SITE NOISE SURVEYS: Continue studies 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) (\$260) SEA TRIALS OF NEW SUBMARINE WATCHSTANDING SCHEDULE: Continue study to evaluate the effectiveness of a new watchstanding schedule on submariner performance.
- (U) (\$1,171) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Complete final phase of field testing of TSAS suits in rotary wing aircraft to include pitch/roll algorithms. Discontinue fixed wing support portion of project. Writing final report and delivering product.
- (U) (\$117) COMPUTER ASSISTED MANAGEMENT OF FIELD DENTAL EMERGENCIES: Initiate and complete beta- and field testing of a software CD-ROM prototype that assists ancillary medical personnel in diagnosis and treatment of dental emergencies.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 7 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

- (U) (\$176) DIVER COOLING SYSTEM FOR PERSONAL PROTECTIVE EQUIPMENT USED IN CONTAMINATED WATER DIVING: Initiate and complete testing of diving dry suits retrofitted with a COTS cooling system for diving in contaminated warm waters without heat exhaustion.
- (U) (\$246) USING ESP (ESTIMATING SUPPLIES PROGRAM) TO VALIDATE FLEET MARINE FORCE MEDICAL RESOURCE REQUIREMENTS: Initiate field testing of a computer application that provides medical planners with accurate consumable medical supplies to deliver based on type and volume of patient casualty stream.
- (U) (\$225) EVALUATION OF A NEW PORTABLE HEAT STRESS METER FOR USE IN THE US NAVY AND MARINE CORPS. Initiate and complete evaluation of new COTS heat stress meter.
- (U) (\$144) DVANCED ELECTRONIC STETHOSCOPE FOR GENERAL FIELD USE. Initiate and complete field testing of a prototype electronic stethoscope, which allows accurate vital sign monitoring by health care providers during environmental conditions with high background noise.
- (U) (\$1,954) MEDICAL DATA SURVEILLANCE AND NAVAL MEDICAL WATCH BOARD THREAT ALERT INTERFACE: Initiate testing of a C4I system that will create geographical displays of medical threat alerts.
- (U) (\$1,487) LONG RANGE RAID CASUALTY EVACUATION, EN ROUTE CARE, OPERATIVE FIELD DENTISTRY: Initiate field testing of critical care medical and dental equipment to execute current military operations.
- U) (\$2,907) CENTER FOR DISASTER MANAGEMENT: Provides education, training courses, research, scientific outreach, disaster preparedness, strategic planning and support to humanitarian operations
- (U) (\$28,240) NATIONAL BONE MARROW REGISTRY: Improves the donor matching system, which will speed up emergency response times and increase success rates.(U)
- (U) (\$1,466) NATIONAL BLOOD RESEARCH LABORATORY: To determine the optimum method to produce the maximum amount of growth factors from units of high yield platelets collected by the American Red Cross and determine methods to reduce particulate matter in blood product transfusion

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 8 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

- (U) (\$5,648) RURAL HEALTH: Identify specific needs and requirements confronting the delivery of healthcare and continuing medical education in remote and medically under-served areas.
- (U) (\$977) COMMUNITY HOSPITAL TELEHEALTH CONSORTIUM: Improve and expand the opportunity for rural and urban underserved populations to receive quality, affordable health care.
- (U) (\$1,173) MINIMALLY INVASIVE SURGICAL TECHNOLOGY INSITUTE: Provide an integrated approach allowing investigators to perform experimental studies which will result in the development of non-invasive monitoring techniques and surgical interventional methods, cell therapy rather than organ replacement, and further examination of approaches to accelerate wound healing.
- (U) (\$1,466) VECTORED VACCINE RESEARCH PROGRAM: Pursue technology to vaccinate people by placing a vectored vaccine on the surface of the skin. Needles are not required to administer the vaccine and the person being vaccinated is not subjected to the pain of needle injection.
- (U) (\$3,420) BIOMEDICAL RESEARCH IMAGING CORE: Expand the current molecular imaging facilities at the City of Hope National Medical Center and the Beckman Research Institute with the addition of a 600 MHz spectrometer and an X-ray crystallographic imaging plate system.
- (U) (\$977) LOW COST RETRACTABLE NEEDLE AND SAFETY SYRINGE: Develop a prototype for testing and application of a hypodermic retractable needle safety syringe for the protection of patients and healthcare workers.
- (U) (\$3,322) TREATMENT OF RADIATION SICKNESS RESEARCH: Establish a large, racially diverse stem cell umbilical cord blood bank that can be used for the treatment of victims of radiation exposure in an emergency and for the five to ten thousand patients each year who are afflicted with many of the diseases that can be treated by stem cell transplants like leukemias and lymphomas.
- (U) (\$2,541) MEDICAL PROCEDURE REFERENCE TOOL: Develop a Medical Procedures Reference Tool for field use. The Medical Procedures Reference Tool (MPRT) is a computer-based system that will provide refresher and advanced medical training and specialized reference materials to Navy Corpsmen (HM).
- (U) (\$2,199) NATIONAL CENTER FOR COLLABORATION IN MEDICAL MONITORING AND SIMULATION: Integrate the medical resources of Eastern Virginia Medical School with the expertise in modeling and simulation of the Virginia Modeling, Analysis and Simulation Center (VMASC) at Old Dominion University. The Center is adapting military, government, and industrial modeling and simulation technologies for use in medical and surgical training and in the delivery of medical services.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 9 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

- (U) (\$977) INSTITUTE OF TECHNOLOGY BIOMEDICAL RESEARCH AND DEVELOPEMNT COMPLEX: Develop a highly integrated portable sensor system for the detection of Chemical and Biological Warfare (CBW) Agents. This device will have the potential to detect spores and aerosols and be capable of detecting a variety of agents ranging from small molecules, to proteins, viruses, and bacteria.

3. (U) FY 2004 PLAN:

- (U) (\$1,133) NONINVASIVE INTERNAL HEMOSTASIS (ULTRASOUND): Initiate studies and testing of a lightweight portable hand held instrument to control and cauterize deep internal hemorrhage by non-invasive ultrasound.
- (U) (\$436) RESUSCITATION FLUIDS: Initiate studies to test and evaluate an improved low volume physiologic fluid that maintains cardiovascular parameters during acute hemorrhage in the presence, or absence of head injury.
- (U) (\$227) USING ESP (ESTIMATING SUPPLIES PROGRAM) TO VALIDATE FLEET MARINE FORCE MEDICAL RESOURCE REQUIREMENTS: Continue field testing of a computer application that provides medical planners with accurate consumable medical supplies to deliver based on type and volume of patient casualty stream.
- (U) (\$1,735) MEDICAL DATA SURVEILLANCE AND NAVAL MEDICAL WATCH BOARD THREAT ALERT INTERFACE: Continue testing of a C4I system that will create geographical displays of medical threat alerts.
- (U) (\$435) SHIPBOARD MEDICAL GRADE WATER: Initiate testing and evaluation of the shipboard medical grade water system water under field conditions. This technology provides continuous quantities of sterile USP grade water for medical use (e.g., reconstitution of lyophilized drugs and blood products) in a forward area.
- (U) (1,627) LONG RANGE RAID CASUALTY EVACUATION, EN ROUTE CARE, OPERATIVE FIELD DENTISTRY: Continue field testing and evaluation of critical care medical and dental equipment to execute current military operations

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 10 of 20)

UNCLASSIFIED



UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 11 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TOTAL COMPLETE	TOTAL PROGRAM
M2650 Voice Instructional Devices (VID)	5,821	0		0	0	0	0	0	0	5,821

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) (\$5,821) VOICE INSTRUCTIONAL DEVICES (VID): Completed the test and evaluation of voice activated technology for ship-board environmental health and clinical medicine practices.

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 12 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 13 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M2896 Military Dental Research	2,761	2,933	0	0	0	0	0	0	0	5,694

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) (\$2,761) Continued studies to address dental readiness and preparedness issues prior to deployment, as well as continued the further development of salivary tests that determine exposure to infectious diseases and bio-terrorism agents.

2. (U) FY 2003 PLAN:

- U) (\$2,933) DENTAL HEALTH: Support the Military Dental Research Programs of the Naval Institute for Dental and Biomedical Research (NIDBR) and the US Army Dental Research Detachment (USARD) collocated at the Naval Training Center (NTC), Great Lakes, IL. The primary focus of these Military Dental Research Programs is to examine the dental threat to our operational forces and develop techniques and products to improve dental and medical care for these forces.

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 14 of 20)

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 15 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 16 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M2897 High Resolution Digital Mammography	1,443	0	0	0	0	0	0	0	0	1,443

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop a high resolution digital detector for use in digital mammography and to develop a clinical workstation for display of high resolution image data sets generated by digital images.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2002 ACCOMPLISHMENTS:

- (U) (1,443) High Resolution Digital Mammography: Completed the development a high resolution digital detector for use in mammography and medical workstations to display the high resolution mammogram images..

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 17 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 18 of 20)

UNCLASSIFIED



UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
 PROGRAM ELEMENT TITLE: Medical Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	FY 2008 ESTIMATE	FY 2009 ESTIMATE	TOTAL COMPLETE	TOTAL PROGRAM
M2795 Coastal Cancer Control (MUSC)	3,396	4,452	0	0	0	0	0	0	0	7,848

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.

R-1 Line Item 134

Budget Item Justification  
 (Exhibit R-2, Page 19 of 20)

UNCLASSIFIED

UNCLASSIFIED

FY 2004 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2003

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N  
PROGRAM ELEMENT TITLE: Medical Development

B. (U) PROGRAM CHANGE SUMMARY: See Program Change for PE

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

Budget Item Justification  
(Exhibit R-2, Page 20 of 20)

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0604777N NAVIGATION/ID SYSTEMS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>22.317</b>	<b>45.579</b>	<b>45.726</b>	<b>28.788</b>	<b>48.525</b>	<b>46.976</b>	<b>48.429</b>	<b>49.329</b>
F0253 Navigation and Electro-Optical Support	<b>2.169</b>	<b>14.262</b>	<b>11.474</b>	<b>6.249</b>	<b>9.292</b>	<b>7.310</b>	<b>8.018</b>	<b>8.164</b>
W0676 Improved ID Development	<b>1.656</b>	<b>1.912</b>	<b>1.553</b>	<b>1.810</b>	<b>2.789</b>	<b>3.769</b>	<b>3.840</b>	<b>3.912</b>
W1253 Combat ID System	<b>5.686</b>	<b>10.693</b>	<b>10.572</b>	<b>5.750</b>	<b>14.482</b>	<b>13.480</b>	<b>13.732</b>	<b>13.986</b>
X0921 NAVSTAR GPS Equipment	<b>12.806</b>	<b>18.712</b>	<b>22.127</b>	<b>14.979</b>	<b>21.962</b>	<b>22.417</b>	<b>22.839</b>	<b>23.267</b>

**(U) A. 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 Imaging System (F0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Imaging System 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) for Mark XIIA, and Improved Identification Development (W0676) for AN/UPX-29, covers the Navy lead of a MK XIIA Mode5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. 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).

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 the GPS program and provides Air and Sea units with jam resistant GPS antennas and receivers to ensure the continued use of GPS information in a hostile environment.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS			PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	2.169	14.262	11.474	6.249	9.292	7.310	8.018	8.164
RDT&E Articles Qty	0	0	0	0	0	0	0	0

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The Navigation and Electro-Optical Support program develops Submarine Electro-Optical and imagery systems and equipment that will improve submarine imaging capability in the areas of: ship safety, Intelligence, Surveillance and Reconnaissance (ISR), and tactical control (contact management in the littorals). The Photonics Imaging System, mounted on the Universal Modular Mast will provide imaging capability for the VIRGINIA class submarine. The Photonics Imaging System 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. Specific efforts include: (1) Photonics Imaging System On-Board Team Trainer Development (2) Photonics Imaging System At Sea Test And Evaluation (3) Photonics Imaging System Sensors and image processing improvements. In November 2000, the Submarine Tactical Requirements Group (STRG) identified imaging capability shortfalls that must be corrected to support high intensity operations in the littoral and provide the submarine force with the tactical imaging systems necessary to safely and effectively employ its surveillance and weapons capabilities. Specific efforts undertaken to meet the STRG requirements are: (1) Type 18 Periscope Automated Range Finder development. (2) Submarine Common Imagery System Development.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.908			
RDT&E Articles Quantity				

Complete Photonics On-Board Team Trainer development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.163	1.144		
RDT&E Articles Quantity				

FY02 - Perform EDM Removal/Deinstallation Planning.  
FY03 - Perform EDM Removal/Deinstallation.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.098	0.933		
RDT&E Articles Quantity				

FY02 - Perform Photonics At Sea Test And Evaluation.  
FY03 - Complete Photonics At Sea Test And Evaluation.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.344	2.581	2.450
RDT&E Articles Quantity				

Initiate Submarine Common Imagery System development.  
 Complete Submarine Common Imagery System development.  
 Perform Advanced Processor Build (APB) Systems Engineering for Submarine Common Imagery System.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.360	1.189	
RDT&E Articles Quantity				

Perform Systems Engineering for Automated Rangefinder for Type 18 Periscope development.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		4.212	4.046	2.740
RDT&E Articles Quantity				

Develop Low Light Level TV, improved image processing, and Photonics Imaging System all digital signal path.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N /BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			2.849	
RDT&E Articles Quantity				

Perform Photonics Imaging System EDM Shock Test and convert to the configuration control model.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		3.269	0.809	1.059
RDT&E Articles Quantity				

Photonics ESM Performance Improvement (PEPI) development.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-5</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0604777N NAVIGATION / ID SYSTEMS	<b>PROJECT NUMBER AND NAME</b> F0253 Navigation and Electro-Optical Support			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY2003 Pres Budget		2.271	14.584	0.000	0.000
FY2004 Pres Budget		2.169	14.262	11.474	6.249
Total Adjustments		-0.102	-0.322	11.474	6.249
Summary of Adjustments					
Inflation reduction		0.000	-0.155		
SBIR/STTR Transfer		-0.035	0.000		
Congressional Recissions		-0.011	-0.167		
Reprogrammings		-0.056	0.000		
Program Adjustments				11.474	6.249
Subtotal		-0.102	-0.322	11.474	6.249
(U) Schedule:					
Not applicable					
(U) Technical:					
Not applicable					

R-1 SHOPPING LIST - Item No. 135

# UNCLASSIFIED



**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION / ID SYSTEMS	PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support
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**D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) SCN Line 201300 (Photonics Mast only)	25.340	22.301	22.702	23.114	23.535	47.328	48.277	49.144	Continuing	Continuing
OPN Line 083100 (PL018 & PL020)	0.000	6.000	0.000	8.700	11.375	19.260	19.626	19.999	Continuing	Continuing
OPN Line 083105	0.000	0.000	0.800	0.000	1.408	2.283	3.824	3.888	Continuing	Continuing
(U) Related RDT&E										
(U) PE 0604558N (The VIRGINIA Class Design Development)	3.307	4.000	4.000	3.600	1.216	.200	.224	.228	Continuing	Continuing

**E. ACQUISITION STRATEGY: \***  
Not applicable

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

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION / ID SYSTEMS			F0253 Navigation and Electro-Optical Support						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	34.962	9.061	10/02	5.558	10/03	3.122	10/04	Continuing	Continuing	
Software Development	Various	Various		0.600	10/02	0.700	10/03	0.700	10/04	Continuing	Continuing	
Aircraft Integration												0.000
Ship Integration												0.000
Ship Suitability												0.000
Systems Engineering	WR / RC	NUWC Newport, RI	5.922	4.050	10/02	1.109	10/03	1.904	10/04	Continuing	Continuing	
Training Development												0.000
Licenses												0.000
Miscellaneous	Various	Various	0.556	0.000	01/03	1.302	10/03	0.043		Continuing	Continuing	
GFE												0.000
Award Fees												0.000
Subtotal Product Development			41.440	13.711		8.669		5.769		Continuing	Continuing	
Remarks:												
Development Support												0.000
Software Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
Studies & Analyses												0.000
GFE												0.000
Award Fees												0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000
Remarks:												

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**CLASSIFICATION:**

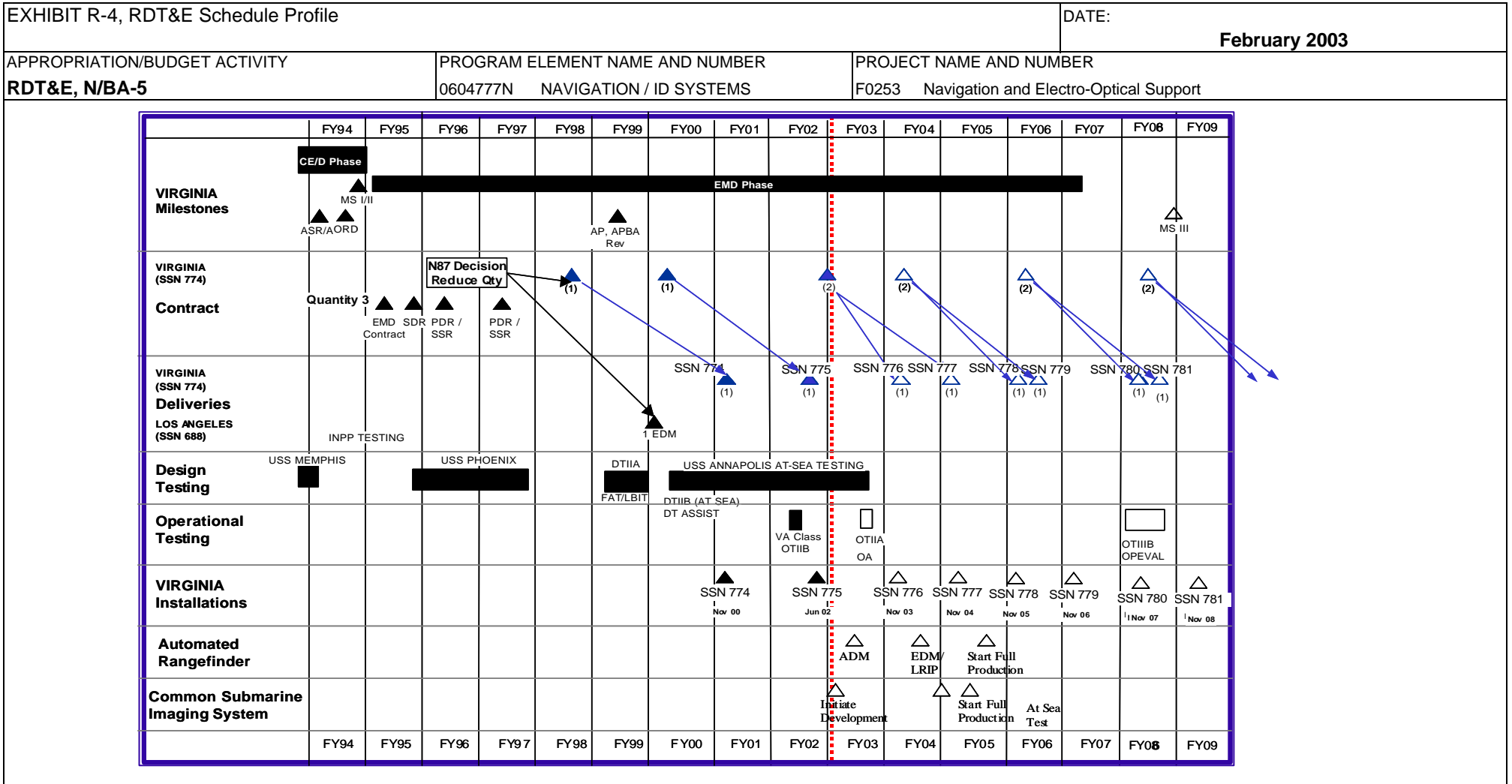
Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION / ID SYSTEMS			F0253 Navigation and Electro-Optical Support						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Program Management Support						2.395	10/03		10/04	Continuing	Continuing	
Management Support Services ETS	Various	Various	3.650	0.511	11/02	0.370		0.440		Continuing	Continuing	
Travel			0.457	0.040		0.040		0.040			0.577	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			4.107	0.551		2.805		0.480		Continuing	Continuing	
Remarks:												
Total Cost			45.547	14.262		11.474		6.249		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 135

**UNCLASSIFIED**

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CLASSIFICATION:



R-1 SHOPPING LIST - Item No. 135

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>1.656</b>	<b>1.912</b>	<b>1.553</b>	<b>1.810</b>	<b>2.789</b>	<b>3.769</b>	<b>3.840</b>	<b>3.912</b>
RDT&E Articles Qty								

**A. 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. 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 MK XII (W0676) addresses 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA -5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Mark XIIA Mode 5 Improvement for AN/UPX-29	0.878	1.385	0.590	1.384
RDT&E Articles Quantity				

Initiated development of MARK XIIA Mode 5 Improvements modifications to the AN/UPX-29(V) for integration with the AEGIS weapons system baseline 7.1C in FY 02.  
 Continue development and complete baseline testing of MARK XIIA Mode 5 Improvements to the AN/UPX-29(V) to include land based testing in FY 03.  
 Continue engineering and integration development of MARK XIIA Improvements to the AN/UPX-29(V); initiate AN/UPX-29(V) Engineering Change Proposal in FY 04.  
 Complete engineering and integration development of MARK XIIA Improvements to the AN/UPX-29(V) and AN/UPX-29(V) Engineering Change Proposal in FY 05.

	FY 02	FY 03	FY 04	FY 05
AN/UPX-29(V) Software Development	0.778	0.527	0.663	
RDT&E Articles Quantity				

Initiated modification of the AN/UPX-29(V) software for interface with the AEGIS weapons system in FY 02.  
 Continue development of AN/UPX-29(V) system software for interface with AEGIS weapons system in FY 03.  
 Continue development of MARK XIIA Improvement to the AN/UPX-29(V) system software for interface with AEGIS weapon system and core ILS documents; formalize hardware/software configuration; update technical data as required in FY 04.

	FY 02	FY 03	FY 04	FY 05
Mark XIIA Mode 5 Development and Operational Test			0.300	0.426
RDT&E Articles Quantity				

Provide support for MARK XIIA Mode 5 DT/OA in FY 04.  
 Provide test asset for MARK XIIA Mode 5 DT/OT in FY 04.  
 Provide support for MARK XIIA Improvements to the AN/UPX-29(V) DT/OT in FY 05.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604777N NAVIGATION/ID SYSTEMS	W0676 IMPROVED ID DEVELOPMENT

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY2003 Pres Budget		1.755	1.956	0.000	0.000
FY2004 Pres Budget		1.656	1.912	1.553	1.810
Total Adjustments		-0.099	-0.044	1.553	1.810

Summary of Adjustments

Congressional undistributed reductions			-0.012		
Congressional rescissions		-0.004			
Economic Assumptions		-0.005	-0.032		
Miscellaneous Adjustments		-0.090			
Program Adjustments				1.553	1.810

Subtotal		-0.099	-0.044	1.553	1.810
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(U) Schedule:

Program milestone changes reflect reduced development funding and extended cryptographic development/certification schedule.

(U) Technical: Not applicable.

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>
Identification Systems - 42MT	17.698	31.163	21.829	17.582	25.499	27.265	27.405	27.873	Continuing	Continuing



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT
<p><b>(U) E. ACQUISITION STRATEGY: *</b> 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.</p>		

R-1 SHOPPING LIST - Item No. 135

**UNCLASSIFIED**

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 15 of 37)

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS			W0676 IMPROVED ID DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD, MD	0.878								0.878	
Ancillary Hardware Development												
Aircraft Integration												
Ship Integration	WR	NAWCAD, MD		0.300	11/02	0.160	11/03	0.300	11./04	Continuing	Continuing	
Ship Suitability												
Systems Engineering	WR	NAWCAD, MD		0.700	11/02	0.430	11/03	0.694	11/04	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.878	1.000		0.590		0.994		Continuing	Continuing	
Remarks:												
Development Support												
Software Development	WR	NAWCAD, MD	0.778	0.527	11/02	0.333	11/03			Continuing	Continuing	
Integrated Logistics Support	WR	NAWCAD, MD		0.285	11/02	0.192	11/03	0.350	11/04	Continuing	Continuing	
Configuration Management	WR	NAWCAD, MD				0.050	11/03	0.050	11/04	Continuing	Continuing	
Technical Data	WR	NAWCAD, MD		0.100	11/02	0.088	11/03	0.100	11/04	Continuing	Continuing	
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			0.778	0.912		0.663		0.500		Continuing	Continuing	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS				W0676 IMPROVED ID DEVELOPMENT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD, MD				0.050	11/03	0.100	11/04	Continuing	Continuing	
Operational Test & Evaluation	WR	NAWCAD, MD						0.216	11/04	Continuing	Continuing	
Live Fire Test & Evaluation												
Test Assets	WR	NAWCAD, MD				0.250	11/03				0.250	
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.300		0.316		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Transportation												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Total Cost			1.656	1.912		1.553		1.810		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 135

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2003</b>																
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS										PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Milestones</b>						MS B △																														
<b>Contracts &amp; Deliverables</b>										△	DI & CXP Deliveries with Crypto Emulator			△	Deliver Prototype Hardware (DI, CXP, RT-1832)																					
<b>Development &amp; Engineering</b>																																				
<b>Integration</b>																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Development Test																																				
Operational Test																																				

R-1 SHOPPING LIST - Item No. 135

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



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W1253 COMBAT ID SYSTEMS			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	5.686	10.693	10.572	5.750	14.482	13.480	13.732	13.986
RDT&E Articles Qty								

**A. 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 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 January 2002.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA -5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W1253 COMBAT ID SYSTEMS

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Mode 5 prototype hardware & cryptographic module	2.690	6.644	6.040	2.281
RDT&E Articles Quantity			28	

Completed Stage Frequency assignment in FY02. Design and develop prototype Mode 5 ECP kits (Mode 5 processor card, software mode 5 cryptography and cryptographic emulator) in FY03. Design and develop lab-based Electronic Test Equipment (ETE) kits in FY03 to support integration and developmental test and evaluation . Continue development of kits for installation into existing fleet assets (AN/UPX-37 Interrogator, AN/APX-118 Common Digital Transponder, the RT-1832/APX Transponder) in FY04. Repair any deficiencies in identified during testing in FY05 to support Milestone C.

	FY 02	FY 03	FY 04	FY 05
Mode 5 systems engineering	2.611	3.257	1.610	1.611

Perform systems engineering in support of the Mode 5 hardware/software development efforts on the the AN/UPX-37 Interrogator, AN/APX-118 Common Digital Transponder, the RT-1832/APX Transponder, cryptographic module and ETE during FY03 through FY05.

	FY 02	FY 03	FY 04	FY 05
Conduct DT & OT of the Mode 5 upgrade	0.385	0.792	2.922	1.858

Conduct test preparations in FY02 & 03. Mode 5 Developmental and Operational test phases for the AN/UPX-37 Interrogator, AN/APX-118 Common Digital Transponder, the RT-1832/APX Transponder, cryptographic module and ETE in FY04 and FY05. Mode 5 TECHEVAL and OPEVAL in FY07.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W1253 COMBAT ID SYSTEMS
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY2003 Pres Budget		6.023	10.934	0.000	0.000
FY2004 Pres Budget		5.686	10.693	10.572	5.750
Total Adjustments		-0.337	-0.241	10.572	5.750
Summary of Adjustments					
Congressional program reductions			-0.064		
Congressional undistributed reductions					
SBIR/STTR Transfer		-0.015			
Economic Assumptions		-0.016	-0.177		
Reprogrammings					
Other Navy/OSD Adjustments		-0.306			
Program Adjustments				10.572	5.750
Subtotal		-0.337	-0.241	10.572	5.750

(U) Schedule:

Program milestone changes reflect reduced development funding and extended cryptographic development/certification schedule.

(U) Technical: Not applicable.

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Identification Systems - 42MT	17.698	31.163	21.829	17.582	25.499	27.265	27.405	27.873	Continuing	Continuing



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:	<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N / BA-5</b>	0604777N NAVIGATION/ID SYSTEMS	W1253 COMBAT ID SYSTEMS	
<p><b>(U) E. ACQUISITION STRATEGY: *</b> 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.</p>			

R-1 SHOPPING LIST - Item No. 135

**UNCLASSIFIED**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS			W1253 COMBAT ID SYSTEMS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VAR	VAR	2.735	6.644	05/03	6.040	12/03	2.281	12/04	Continuing	Continuing	
Primary Hardware Dev, Electronics												
Aircraft Integration												
Ship Integration												
Ship Suitability												
Systems Engineering	WR	NAWCAD, MD	1.175	1.705	11/02	0.348	12/03	0.300	12/04	Continuing	Continuing	
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			3.910	8.349		6.388		2.581		Continuing	Continuing	
Remarks:												
Development Support												
Software Development, Electronics			2.933								2.933	
Integrated Logistics Support	WR	NAWCAD, MD	0.145	0.172	11/02						0.317	
Configuration Management												
Technical Data			0.053								0.053	
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			3.131	0.172		0.000		0.000			3.303	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS				W1253 COMBAT ID SYSTEMS					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD, MD	0.850	0.792	11/02	2.922	12/03	1.358	12/04	Continuing	Continuing	
Operational Test & Evaluation	WR	NAWCAD, MD						0.500	12/04	Continuing	Continuing	
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.850	0.792		2.922		1.858		Continuing	Continuing	
Remarks:												
Contractor Engineering Support			0.450								0.450	
Government Engineering Support	WR	NAWCAD, MD	0.918	0.516	11/02	0.537	12/03	0.558	12/04	Continuing	Continuing	
Program Management Support	WR	NAVAIR, MD	0.605	0.799	11/02	0.685	12/03	0.713	12/04	Continuing	Continuing	
Travel	WR	NAVAIR, MD	0.060	0.065	11/02	0.040	12/03	0.040	12/04	Continuing	Continuing	
Transportation												
SBIR Assessment			0.015								0.015	
Subtotal Management			2.048	1.380		1.262		1.311		Continuing	Continuing	
Remarks:												
Total Cost			9.939	10.693		10.572		5.750		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 135

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 25 of 37)

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE: <b>February 2003</b>														
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS										PROJECT NUMBER AND NAME W1253 COMBAT ID SYSTEM														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
<b>Milestones</b>						MS B △										MS C △										FRPDR & IOC ☆								
<b>Contracts &amp; Deliverables</b>										△	DI & CXP Deliveries with Crypto Emulator			△	Deliver Prototype Hardware (DI, CXP, RT-I 832)						△	LRIP Contract Award												
<b>Development &amp; Engineering</b>																																		
<b>Integration</b>																																		
<b>Test &amp; Evaluation Milestones</b>																																		
Development Test																																		
Operational Test																																		

R-1 SHOPPING LIST - Item No. 135

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



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>797.309</b>	<b>12.806</b>	<b>18.712</b>	<b>22.127</b>	<b>14.979</b>	<b>21.962</b>	<b>22.417</b>	<b>22.839</b>	<b>23.267</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											<b>0</b>

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 (NAVMPMS)/Joint Mission Planning System (JMPS).

The Surface Ship and Submarine integration efforts include two vitally important navigation integration initiatives: NAVSSI and the AN/WRN-6 replacement. 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 GPS Versa Module Europa (VME) 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: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT
<p>The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel tasked by OPNAV N6 and ASN(RD&amp;A), assessed the Navy's GPS Vulnerabilities and recommended specific actions to resolve serious issues to ensure the continued availability of GPS information in a high risk hostile jamming environment. As a result, OPNAV N633 (now N611) and N880 (now N78) drafted the Navy Enhanced GPS User Equipment ORD to address operational requirements. These were validated and the ORD was approved on June 7, 2000. With this beginning, OSD directed the first phase of the Navy's overall GPS upgrade program with RDT&amp;E leading to initial procurements of GPS anti-jam antennas beginning in 2001 for aircraft and 2002 for ships. RDT&amp;E continues to support platform integration requirements, DT/OT, as well as the development of a smaller and a conformal low-observable anti-jam (AJ) antennas for aircraft with those requirements, and a new a technology AJ solution for submarines. Two similar but separate ACAT III programs (Air and Sea NAVWAR) have been established and have become the basis for the Navy's NAVWAR program.</p> <p>The second phase (referred to as Air and Sea GPS Modernization) of the Navy's overall GPS User Equipment upgrade, will require RDT&amp;E to support the replacement of existing legacy GPS receivers with enhanced capability new receivers. These new receivers will incorporate GPS Joint Program Office (JPO) directed and developed technology enhancements to support new signals in space, enhanced receiver security, and aircraft operations within controlled airspace. All of these efforts will be directed, tasked, and funded through PMW/PMA-156.</p>	

R-1 SHOPPING LIST - Item No. 135

**UNCLASSIFIED**

Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 29 of 37)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N      NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.700	2.071	0.000	0.000
RDT&E Articles Quantity	0	0	0	0

**(U) FY02 ACCOMPLISHMENTS:**

(U) (\$3.700) Continued NAVSSI upgrade, integration engineering and testing with shipboard combat, weapons, navigation, and command and control systems. Evolutionary upgrades included all integrations required for the support of Aircraft Carrier, Destroyer and Amphibious Platform Integrations. Testing of evolutionary upgrades included 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). Continued support of NSSN integration of GVRG. Continued development of Interactive Electronic Technical Manual (IETM) to meet the standards of the current NAVSSI Block. Transition of 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.

**(u) FY03 PLANS:**

U) (\$2.071) Complete NAVSSI integration engineering for shipboard combat, weapons, navigation, command and control systems and NAVSSI Lite development

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	7.656	12.445	15.698	10.009
RDT&E Articles Quantity				

**(U) FY02 ACCOMPLISHMENTS:**

(U) (\$7.656) Air NAVWAR: Completed DT testing on the C-130 and P-3C. Continued integration and DT on the HH-60H. Continued integration efforts for the F/A-18C/D and AV-8B. Validated aircraft modeling/simulation data. Started NAVWAR anti-jam conformal antenna and MAGR 2000 receiver design integrations on F/A 18C/D/E/F. Continued GAS-1N and MAGR 2000 design integrations on the AV-8B. Began RDT&E efforts on the EA-6B and CH-53. Continued support to the GPS JPO for modernization Initiatives and coordinating JPO initiatives with the Navy's F/A-18 program which was selected as the air "lead the force" platform for future GPS Modernization development and integration.

**(U) FY03 PLANS:**

(U) (\$12.445) Air NAVWAR Begin integration testing on the F/A-18C/D/E/F, AV-8B, and EA-6B, HH-60H, CH-53. Begin DT/OT on the F/A-18C/D and AV-8B. Complete DT/OT on the HH-60H. Continue support to the GPS JPO for modernization Initiatives and coordinate JPO initiatives with the Navy's F/A-18 program as the selected air platform for "lead the force" GPS Modernization development and integration.

**(U) FY04 PLANS:**

(U) (\$15.698) Air NAVWAR: Complete DT/OT testing on AV-8B and F/A -18C/D. Continue development/qualification testing of the conformal array and begin evaluation of the Digital Antenna Electronics (DAE) integration efforts for potential application to the F/A-18E/F. Begin DT efforts on EA-6B and MH/CH-53 integrations. Begin DT efforts on additional aircraft T/M/S. Begin integration efforts on additional aircraft T/M/S.

**(U) FY05 PLANS:**

(U) (\$10.009) Air NAVWAR: Complete DT/OT testing on AV-8B, F/A-18 C/D, MH/CH-53. Begin DT/OT on the F/A-18 E/F. Continue development/qualification testing on the conformal array. Continue development/integration testing on the Digital Antenna Electronics (DAE) for potential application to the F/A-18E/F. Begin DT efforts on additional aircraft T/M/S. Begin integration efforts on additional aircraft T/M/S.



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N      NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.450	4.196	4.929	3.470
RDT&E Articles Quantity				

(U) FY02 ACCOMPLISHMENTS:  
 U) (\$1.450) Sea NAVWAR: Finalized Phase 1A groundplane design and baseline GAS-1 system interface requirements. Completed DT and planning OA on an MCM-Class ship. Continued initial integration efforts on selected platforms. Continued GAS-1 Antenna Electronics (AE) Fiber Optic Antenna Link (FOAL) design and analysis for the NAVSSI integration. Continued to evaluate anti-jam technologies for application to the submarine environment.

(U) FY03 PLANS:  
 U) (\$4.196) Sea NAVWAR: Begin RDT&E modeling/simulation and integration analysis for MHC and L-class ships. Conduct a friendly emitter analysis on selected US ships. Complete the OA on the MCM. Complete DT on the LCAC and MHC. Begin integration and DT/OT preparations for additional Phase 1A platforms. Finalize the Fiber Optic Antenna Link and GAS-1 AE integration with NAVSSI. Begin integration efforts on Phase 1B platforms. Continue to evaluate anti-jam technologies for application to the submarine environment.

(U) FY04 PLANS:  
 U) (\$4.929) Sea NAVWAR: Continue initial integration efforts (modeling and simulation) on selected Phase 1B platforms. Begin DT/OT efforts on selected Phase 1B ship classes. Begin initial submarine integration and development efforts.

(U) FY05 PLANS:  
 U) (\$3.470) Sea NAVWAR: Continue initial integration efforts (modeling and simulation) on selected platforms. Begin NRE integration efforts on additional Phase 1B ship classes. Continue submarine AJ development and integration efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.500	1.500
RDT&E Articles Quantity				

(U) FY04 PLANS:  
 U) (\$1.500) Continue support to the GPS JPO for modernization Initiatives (i.e. Digital Antenna Electronics (DAE)). Coordinate JPO and F/A-18 program office efforts on F/A-18 "lead the force" GPS Modernization efforts.

(U) FY05 PLANS:  
 U) (\$1.500) Continue support to the GPS JPO for modernization Initiatives (i.e. Digital Antenna Electronics (DAE)). Coordinate JPO and F/A-18 program office efforts on F/A-18 "lead the force" GPS Modernization efforts.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY2003 Pres Budget	13.745	19.144		
FY2004 Pres Budget	12.806	18.712	22.127	14.979
Total Adjustments	-0.939	-0.432	22.127	14.979

Summary of Adjustments

Section 8123: Management Reform Initiative	-0.121			
SBIR Assessment	-0.211			
Section 313, PL 107-206: Revised Economic Assuptions	-0.029			
Section 8135: Economic Assumptions	-0.036	-0.107		
Section 8100: Business Process Reform		-0.076		
Section 8109: IT Growth		-0.035		
Section 8029, PL 107-248: FY03 FFRDC Reduction		-0.011		
Miscellaneous Navy Adjustments	-0.542			
Miscellaneous Department Adjustments		-0.203	22.127	14.979
Subtotal	-0.939	-0.432	22.127	14.979

(U) Schedule:

Air Phase 1: Schedule now includes F/A-18 C/D which was previously a Phase 2B candidate platform. This will extend the Phase 1 integration & test schedule out through FY 05 for that platform.

(U) Technical:

Air Phase 1: Engineering and Technical analysis determined that the F/A-18 C/D is a good candidate for Phase 1 GAS-1 integration and this platform is now a priority for Air NAVWAR RDT&E integration and test.

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTAR GPS EQUIPMENT
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost
(U) OPN Line #2657	FY	13.952	11.162	15.674	11.803	13.321	12.626	12.865	13.107	Continuing	Continuing
(U) APN - Common Avionics	PY	6.995	4.443	0.000	0.000	18.114	22.372	22.770	23.157	Continuing	Continuing

**(U) E. ACQUISITION STRATEGY:**

(NAVWAR) Participate in GPS Joint Program Office and Warner Robbins ALC FY01 - FY07 procurements for the GAS-1 anti-jam antenna. Initiate Navy contracting options for smaller array anti-jam antennas and conformal/low observable arrays for selected aircraft. Initiate Navy contracting for the shipboard ground plane and submarine array. Participate with the GPS JPO in their development of a Digital Antenna Electronics (DAE) LRU and identify potential Navy candidate platforms. Support the GPS JPO in their F/A-18 "lead the force" GPS Modernization efforts. Participate in GPS JPO procurements wherever practicable for GPS Modernization Enhancements. See attached Milestone chart.

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS			X0921 NAVSTAR GPS EQUIPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	Various	Product Venders	263.979	3.687	Various	4.650	Various	3.101	Various	Continuing	Continuing	
Product Development SSC-SD	WX	SSC-SD	64.678	0.700	10/02	0.492	10/03	0.371	10/04	Continuing	Continuing	
Prod Dev (other in house)	WX	Various Field Activities	440.748								440.748	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			769.405	4.387		5.142		3.472		Continuing	Continuing	
Remarks:												
Development Support	Various	Various	12.710							Continuing	Continuing	
Software Development	Various	SSC-SD/Platfrom Primes	3.250	1.650	10/02	2.039	10/03	1.157	10/04	Continuing	Continuing	
Integrated Logistics Support	Various	SSC-SD/NAWC/SIR/DCS		0.750	10/02	1.000	10/03	1.000	10/04	Continuing	Continuing	
Training Development	WX	SSC-SD/NAWC	0.450	0.500	10/02	0.500	10/03	0.275	10/04	Continuing	Continuing	
Technical Data	Various	Platform PMO's		0.500	10/02	0.500	10/03	0.300	10/04	Continuing	Continuing	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			16.410	3.400		4.039		2.732		Continuing	Continuing	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604777N NAVIGATION/ID SYSTEMS			X0921 NAVSTAR GPS EQUIPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation (NAWC PAX)	WX	NAWC PAX	10.969	0.700	10/02	0.670	10/03	0.500	10/04	Continuing	Continuing	
Test & Evaluation (DCS)	CPAF	DCS CORP PAX	1.427	0.334	10/02	0.350	10/03	0.365	10/04	Continuing	Continuing	
Test & Evaluation (SSC-SD)	WX	SSC-SD	1.145	0.600	10/02	0.800	10/03	0.686	10/04	Continuing	Continuing	
Test & Evaluation Platform Testing	Various	VARIOUS CONTRACTORS	1.379	4.213	Various	5.126	Various	3.147	Various	Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			14.920	5.847		6.946		4.698		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	DCS, SAIC, ARINC	1.500	1.813	10/02	2.122	10/03	1.455	10/04	Continuing	Continuing	
Government Engineering Support	WX	SSC, NAWC, WR	0.700	1.120	10/02	1.330	10/03	0.899	10/04	Continuing	Continuing	
Program Management Support	CPAF	DCS, Price Systems	7.180	2.145	10/02	2.548	10/03	1.723	10/04	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			9.380	5.078		6.000		4.077		Continuing	Continuing	
Remarks:												
Total Cost			810.115	18.712		22.127		14.979		Continuing	Continuing	
Remarks:												

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EXHIBIT R4, Schedule Profile																	DATE: <b>February 2003</b>																			
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																							
<b>RDT&amp;E, N / BA-5</b>					0604777N NAVIGATION/ID SYSTEMS								X0921 NAVSTAR GPS EQUIPMENT																							
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Air NAVWAR Acq M/S</b>																																				
Air Phase 1		▲ FRP			△ GAS-1 F/O AWARD				△ Phase 1 IOC				△ GAS-1 F/O Option 2				△ GAS-1 F/O Option 3				△ GAS-1 F/O Option 4				△ GAS-1 F/O Option 5											
Air Phase 2A					F/A-18 C/D Phase 1 Antenna Integration				DT	OT					F/A-18 C/D LRIP				△ F/A-18 C/D FRP				IOC F/A-18 C/D								IOC					
Air Phase 2B																	△ M/S C LRIP				△ FRP												IOC			
<b>Phase 2A &amp; 2B Antenna Developments</b>																																				
Development									Phase 2A & 2B Antenna Dev and testing																											
EDM deliveries									△ RFP				△ Contract Award				△ EDM																			
<b>Integration and T&amp;E M/S</b>																																				
Phase 1 DT & OT					▲ C/KC-130 DT				HH-60H NRE, DT & OT				CH-53 and F/A-18 C/D NRE DT & OT				AV-8B NRE, DT & OT																			
Phase 2A DT & OT													F/A-18 E/F NRE, DT & OT				OT																			
Phase 2B DT & OT																																				
<b>Platform Installation</b>																																				
Phase 1 (GAS-1)					▲ FRP				C/KC 130 F/R/P/J, HH-60 H				F/A-18 C/D A&B Kit Proc				F/A-18 C/D Installation																			
Phase 2A (Small Antenna)													AV-8BA&B kit proc				AV-8B Installation																			
Phase 2B (Conformal Ant)													F/A-18 E/F A&B kit procurement (Forwardfit 2 year lead) time				F/A-18 E/F																			
<b>System Deliveries**</b>																																				
<b>Sea NAVWAR Acq M/S</b>																																				
Sea Phase 1A					▲ M/S C LRIP				△ FRP	IOC																										
Sea Phase 1B													△ M/S C LRIP				△ FRP	IOC																		
Sea Phase 2													△ M/S B								△ M/S C LRIP				△ FRP	IOC										
<b>Phase 1B GPA DEV</b>																																				
<b>Phase 2 Antenna Dev</b>																																				
Development					Initial Phase 2 Submarine studies by PSU/ARL				Technology downselect																											
EDM deliveries													Antenna Dev Testing				△ EDM																			
<b>Platform T&amp;E M/S</b>																																				
Phase 1A DT & OT									OA	Phase 1 A Operational Assessment																										
Phase 1B DT & OT										Phase 1B TBD Platform NRE, DT & OT																										
Phase 2 DT & OT																																				
<b>Platform Installation</b>																																				
Phase 1A GAS-1					▲ FRP				LCAC, MCM, MHC	FFG, LSD 41, LSD 49																										
Phase 1B (GAS-1 w/FOAL)																																				
Phase 2 (Submarines)																																				
<b>System Deliveries**</b>																																				

R-1 SHOPPING LIST - Item No. 135

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

\*\* Quantities are approximate year-end total number of NAVWAR system deliveries including those projected for new construction aircraft and ships. Quantities do not include RDT&E units or Spares.

# UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA 5</b>	0604777N NAVIGATION/ID SYSTEMS				X0921 NAVSTAR GPS EQUIPMENT			
Air Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Phase 1 FRP	3Q							
Phase 1 1st production platform integration	4Q							
HH-60 H DT/OT	4Q	1Q						
Phase 1 IOC		4Q						
Phase 2A Milestone B		4 Q						
AB-8B DT/OT				4Q	1-2Q			
Phase 2A Milestone C LRIP					2Q			
Phase 2A 1st platform production integration					4Q			
Phase 2A FRP						2Q		
Phase 2A IOC							4Q	
Phase 2B Milestone B		4 Q						
F/A-18 E/F					1-2Q			
Phase 2A Milestone C LRIP					2Q			
Phase 2A 1st platform production integration						2Q		
Phase 2A FRP						2Q		
Phase 2A IOC							4Q	
<b>Sea Profile</b>								
Phase 1A LRIP	3Q							
Phase 1A Operational Assessment (OA)		1Q						
MCM 1st production installation		2Q						
Phase 1A FRP		2Q						
Phase 1A IOC			1Q					
Phase 1B LRIP			3Q					
Phase 1B Operational Assessment (OA)			3Q					
Phase 1 Platform 1st production installation				2Q				
Phase 1B FRP				3Q				
Phase 1B IOC					1Q			
Phase 2 M/S B			4Q					
Phase 2 LRIP					3Q			
Phase 2 Operational Assessment (OA)					3Q			
Phase 2 Platform 1st production installation						2Q		
Phase 2 FRP						3Q		
Phase 2 IOC							1Q	

R-1 SHOPPING LIST - Item No.

135

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**Exhibit R-4a, Schedule Detail**

(Exhibit R-4a, page 37 of 37)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE 0604784N/ Distributed Surveillance System					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	267.335	42.514	37.591	28.755	64.107	69.757	88.258	61.229	52.144	Continuing	Continuing
X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)	267.335	34.657	37.591	28.755	64.107	69.757	88.258	61.229	52.144	Continuing	Continuing
X9085/ ACCELERATE CABLE BURIAL CAPABILITY		3.928									3.928
X9086/ FIBER OPTIC TECHNOLOGY		3.929									3.929
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
<p>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 mine laying. ADS possesses great flexibility with respect to lay down 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 uses conventional acoustic sensors and incorporates processing technologies and advanced sensors and technologies from other related programs.</p> <p>Advanced Deployable Systems (ADS) – Accelerate Cable Burial Capability: Enhance ADS cable survivability and provide a trunk extension installation capability.</p> <p>Advanced Deployable Systems (ADS) – Fiber Optic Technology: Reduce risk in development of remotely powered all optical array technology for application to ADS program.</p>											
<b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>											
<b>ENGINEERING AND MANUFACTURING DEVELOPMENT</b>											
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.											

R-1 SHOPPING LIST - Item No. 136

# UNCLASSIFIED



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System				PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	267.335	34.657	37.591	28.755	64.107	69.757	88.258	61.229	52.144	Continuing	Continuing
RDT&E Articles Qty											0

**(U) A. 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 mine laying. ADS possesses great flexibility with respect to lay down 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.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA -5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

**(U) B. Accomplishments/Planned Program**

<b>DRY END SYSTEM (DES)</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.596	7.175	5.305	13.871
RDT&E Articles Quantity				

**FY02 (\$6,596)** Developed 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) Increment 2 for ADS. Supported system engineering. Continued cable testing for enhanced survivability. Developed Mission Planning Workstation for automated determination of ADS array placement to meet mission requirements.

**FY03 (\$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 Increment 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.

**FY04 (\$5,305)** Installation of the communications relay van at the OPEVAL site, installation of the telecommunications circuits from the OPEVAL site to the Naval Ocean Processing Facility (NOPF), installation of processing and display equipment at the NOPF, installation of ARCI software at the NOPF and conduct of the Dry End Segment Design Verification Test. Participation in ADS's System Integration Test and TECHEVAL test.

**FY05 (\$13,871)** Maintenance support during OPEVAL, refurbishment of the OPEVAL Dry End Segment (DES) equipment. Plan for the resolution of any discrepancies identified during testing. Finalize the DES input to the technical data package. Prepare for production of the DES hardware and plan for an eventual initial operational capability (IOC). Support Milestone III. Coordinate efforts to contract for software maintenance. Initiate development of the Increment 2 and Increment 3 specific DES components.

<b>INSTALLATION SUBSYSTEM (ISS)</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	10.212	12.581	10.490	28.535
RDT&E Articles Quantity				

**FY02 (\$10,212)** Completed preliminary designs of all four of the ISS Hardware Configuration Items (HWCI) and the Software CSCI (Computer Software Configuration Item). Completed 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. Built and tested the IME, verifying cable deployment and termination. Completed the Software CSCI detailed design. For each detailed design completed, the associated Detailed Design Reviews (DDR) were conducted and the drawings released.

**FY03 (\$12,581)** 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.

**FY04 (\$10,490)** Finalize qualification of control and monitoring system (C&M) and Wet End Capsule (WEC) HWCIs. Manufacture and assemble WEC units B, C, and E; refurbish units A and B flowing tests. Manufacture and assemble Trunk Capsule. Perform environmental validation tests. Support DIT, SIT, TECHEVAL, and OPEVAL. Design Transportation and Storage cases. Develop training curricula and conduct training.

**FY05 (\$28,535)** Maintain support during OPEVAL, refurbish the OPEVAL Installation Support Segment (ISS) equipment. Plan for the resolution of any discrepancies identified during testing. Finalize the ISS input to the technical data package. Prepare for production of the ISS hardware and plan for an eventual Initial Operational Capability (IOC). Support Milestone III. Coordinate efforts to contract for software maintenance. Initiate development of the Increment 2 and Increment 3 specific ISS components.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)

**(U) B. Accomplishments/Planned Program**

TEST AND EVALUATION (T&E)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.956	1.350	1.835	4.307
RDT&E Articles Quantity				

**FY02 (\$956)** Developed the system level integrated Verification Plan and initiated the development of system level test documentation to include the installation platform certification, Target Threat Verification Plan, and Environmental Documentation. Supported the System Engineering Management Team (SEMT) and ADS Systems Engineering Team (ASET) in the definition of developmental testing objectives for system level testing.

**FY03 (\$1,350)** Complete required system level test documentation. Monitor the developmental testing conducted by the IPTs and the management of the Integrated Verification Plan. Plan for the conduct of system level testing in FY04. Manage external relationships to Director of Test and Evaluation (DOT&E) and Commander Operational Test and Evaluation Force (COMOPTEVFOR) with respect to testing.

**FY04 (\$1,835)** Coordinate test planning, obtain supporting assets, conduct testing of and analysis results from the PB-A ADS system at a System Integration Test (SIT) and conduct a Technical Evaluation (TECHEVAL). Support COMOPTEVFOR in the conduct of the Operational Evaluation (OPEVAL).

**FY05 (\$4,307)** Complete OPEVAL and coordinate data analysis from FY04 testing. Support Milestone III. Plan and conduct Follow-On Test & Evaluation (FOT&E) efforts to resolve outstanding discrepancies from TECH/OPEVAL. Conduct shock, drop and safety testing in support of Increment 1 certification. Initiate Increment 2 and 3 system level test planning.

WET END SYSTEM (WES)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	10.573	12.063	6.514	10.974
RDT&E Articles Quantity				

**FY02 (\$10,573)** Developed array cable pack design, array internodes splice, array dispenser, T-shell, developed winding technology, lithium battery development, node and sensor CCA (Circuit Card Assembly) design, and array assembly manufacturing. Built and tested the first production representative array. Conducted design verification testing of deployment methods and wet end hardware.

**FY03 (\$12,063)** 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.

**FY04 (\$6,514)** Complete production of the EMD hardware. Package and deliver all EMD test hardware. Conduct the last of the design verification testing, prepare for the system integration test, conduct the analysis of the test results and prepare for TECHEVAL and operational evaluation. Initiate actions to develop a new contract for Increment 3 for a new start in FY05.

**FY05 (\$10,974)** Maintain support during OPEVAL, refurbish the OPEVAL Wet End Segment equipment. Plan for the resolution of any discrepancies identified during testing. Finalize the WES input to the technical data package. Conduct TECHEVAL and operational evaluation. Prepare for production of the WES hardware and plan for an eventual Initial Operational Capability (IOC). Support Milestone III. Initiate development of the Increment 2 and Increment 3 specific WES components. Award contract for Increment 3 new start. Develop and install Increment 3 prototype.

R-1 SHOPPING LIST - Item No. 136

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA- 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)
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**(U) B. Accomplishments/Planned Program**

<b>SYSTEMS ENGINEERING PROJECT MANAGEMENT (SEPM)</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	6.320	4.422	4.611	6.420
RDT&E Articles Quantity				

**FY02 (\$6,320)** Provided System Engineering project management support for the ADS project office; Managed ADS through monitoring of contractor and government technical, schedule, and cost performance. Started Integrated Logistics Support (ILS) plans and infrastructure. Completed revised APBA based on ORD modification. Updated Acquisition Strategy Report (ASR) and Acquisition Plan (AP). Successfully completed program review with ASN/RDA who approved the revised APBA and ASR.

**FY03 (\$4.422)** 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. Conduct Milestone B for Increment I.

**FY04 (\$4.611)** Oversee the preparation for and conduct of integration testing, TECHEVAL, and OPEVAL. Oversee the preparation and delivery of all equipment for TECHEVAL and OPEVAL. Conduct Investment Baseline Review (IBR) for Increment 2 and Increment 3 Development Programs. Initiate contracting efforts for Increment 2 and 3 programs. Conduct Milestone B for Increment 3.

**FY05 (\$6,420)** Support the analyses of TECHEVAL and OPEVAL data. Oversee the delivery of the technical data package for Increment 1. Initiate planning for the production of ADS Increment 1 and oversee preparations for an eventual Initial Operational Capability (IOC). Initiate the ADS Increment 2 and Increment 3 development program and start production planning. Initiate ADS Increment 2 and Increment 3 system engineering efforts.

R-1 SHOPPING LIST - Item No. 136

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		34.711	35.861	28.755	64.107
Current BES/President's Budget		34.657	37.591	28.755	64.107
Total Adjustments		-0.054	1.730	0.000	0.000
Summary of Adjustments					
Section 8123: Management Reform Initiative		-0.307			
Section 313: PL 107-206: Revised Economic Assumption		-0.073			
Section 8135: Economic Assumptions		-0.095	-0.216		
FY02 Federal Technology Transfer (28-Jan-02)		-0.020			
Miscellaneous Navy Adjustments		0.441			
Section 8100: Business Process Reform			-0.154		
Section 8109: IT Cost Growth			-0.071		
Advanced Deployable Off-Board Sensor			2.600		
Section 8029: FY03 FFRDC Reduction P.L. 107-248			-0.021		
Miscellaneous Department Adjustments			-0.408		
Subtotal		-0.054	1.730	0.000	0.000
(U) Schedule:					
Not applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 136

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
<b>OPN#2221</b>	0	0	0	35.427	67.395	80.552	89.194	105.152	Continuing	Continuing
<b>024311N/Project X9102 IUSS MISSION PLANNING</b>	6.686	2.927	0	0	0	0	0	0	0	9.613

These funds provide for the first increment of the Automated IUSS Mission Planning System. This effort builds on 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 segment what are at least level 6 DII-COE compliant. Included is approximately \$800K to collect environmental and physical data for an area of high fleet interest for mission planner demonstration.

**(U) E. ACQUISITION STRATEGY: \***

1. Sole source award of EDM cost plus award fee contact to the PD&RR (Program Definition and Risk Reduction) contractor.
  2. ADS will conduct an evolutionary acquisition approach to meet fleet requirements:
- \* Increment 1: Platform Bravo method Alpha
  - \* Increment 2: Platform Bravo method Bravo
  - \* Increment 3: Off board sensor
  - \* Increment 4: Platform Alpha

	FY02	FY03	FY04	FY05
<b>PROGRAM MILESTONES</b>			Milestone C (LRIP*)	FRP** Milestone
<b>ENGINEERING MILESTONES</b>		WET END SYSTEM VALIDATION REVIEW	SYSTEM INTEGRATION REVIEW	INCREMENT 1 OPERATIONAL PERFORMANCE REVIEW
<b>T&amp;E MILESTONES</b>	SHELL DEPLOYMENT/DROP TEST	ISS IN WATER DESIGN VERIFICATION TEST (DVT); DEPLOYMENT MECHANISM TEST, DUAL ARRAY TEST, SYSTEM SAFETY TEST, DOCKSIDE INTEGRATION TEST	SYSTEM INTEGRATION TEST	TECHNICAL EVALUATION, OPERATIONAL EVALUATION
<b>CONTRACT MILESTONES</b>				CONTRACT FOR INCREMENT2 & 3 DEVELOPMENT AND INCREMENT 1 PRODUCTION

\* LRIP= Low Rate Initial Production  
\*\*FRP= Full Rate Production

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

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	32.617	17.618	11/02	10.495	11/03	20.379	11/04	Continuing	Continuing	Continuing
Government Engineering Support	WX	SSC SAN DIEGO, CA	43.455	7.859	11/02	7.232	11/03	11.586	11/04	Continuing	Continuing	Continuing
Engineering Support Services	C/CPFF	AHA ROCKVILLE, MD	3.120								3.120	3.120
Engineering Support Services	SS/CPFF	APL/JHU LAUREL, MD	4.671	0.176	11/02	0.136	11/03	0.322	11/04	Continuing	Continuing	Continuing
Engineering Support Services	SS/CPFF	ARL/UT AUSTIN, TX	7.322	0.453	11/02	0.149	11/03	0.827	11/04	Continuing	Continuing	Continuing
Software Development	C/CPFF	ORINCON SAN DIEGO, CA	16.534								16.534	16.534
Other Contracts			17.575	2.085		1.338		3.809		Continuing	Continuing	Continuing
Other Activities			18.276	0.761		0.750		1.390		Continuing	Continuing	Continuing
											0.000	0.000
											0.000	0.000
Subtotal Product Development			232.904	28.952		20.100		38.313		Continuing	Continuing	Continuing
Remarks:												
Contract Engineering Support	C/CPFF	AMRON SAN DIEGO ,CA	2.763								2.763	2.763
Government Engineering Support	WX	SSC SAN DIEGO,CA	7.752	0.685	11/02	0.378	11/03	2.253	11/04	Continuing	Continuing	Continuing
Other Contracts			14.715	0.711		0.711		6.299		Continuing	Continuing	Continuing
Other Activities			4.270	1.471		1.121		6.515		Continuing	Continuing	Continuing
											0.000	0.000
											0.000	0.000
											0.000	0.000
Subtotal Support			29.500	2.867		2.210		15.067		Continuing	Continuing	Continuing
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		OTHER CONTRACTS	7.595	0.030		0.173		0.062		Continuing	Continuing	Continuing
Developmental and Operational Test	WX	SSC-SAN DIEGO,CA	11.209	1.320	11/02	1.662	11/03	4.245	11/04	Continuing	Continuing	Continuing
Developmental and Operational Test and Evalu		OTHER ACTIVITIES	4.658							Continuing	Continuing	Continuing
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			23.462	1.350		1.835		4.307		Continuing	Continuing	Continuing
Remarks:												
Program Management Support	C/CPFF	AMRON, SAN DIEGO, CA	5.277								5.277	5.277
Program Management Support		OTHER CONTRACTS	8.082	2.217		2.355		2.697		Continuing	Continuing	Continuing
Program Management Support		OTHER CONTRACTS	2.767	2.205		2.255		3.723		Continuing	Continuing	Continuing
											0.000	
											0.000	
											0.000	
Subtotal Management			16.126	4.422		4.610		6.420		Continuing	Continuing	Continuing
Remarks:												
Total Cost			301.992	37.591		28.755		64.107		Continuing	Continuing	Continuing
Remarks:												



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EXHIBIT R4, Schedule Profile		DATE: February 2003																																		
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																
RDT&E, N / BA-5										0604784N/ Advanced Deployable System										X1300/ ADVANCED DEPLOYABLE SYSTEM																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
QTR	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones</b>																																				
MDA Reviews/Milestones				PR																																
Wet End Subsystem				△				△																												
Installation Sub System								△																												
Dry End Subsystem			▲									△																								
<b>Test &amp; Evaluation Milestones ( Increment 1)</b>																																				
Dual Array Test								△																												
Dockside Integration Test								△																												
System Integration Test												△																								
TECHEVAL												△																								
OPEVAL												△				△																				
<b>Production Milestones</b>																																				
Production Readiness Review												△				△																				

R-1 SHOPPING LIST - Item No. 136

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

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E BA-5</b>	PROGRAM ELEMENT 0604784N/ Distributed Surveillance System				PROJECT NUMBER AND NAME X1300/ ADVANCED DEPLOYABLE SYSTEM			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
<b>WET END SUBSYSTEM</b>								
Node CCA Qual tests	3Q							
Shell designs complete	3Q							
Sensor final design review	3Q							
Hinge and clip drop design verification test		1Q						
Gold Unit Array fabrication	1Q-3Q							
Single Array Test		1Q						
Node pressure vessel qual		2Q						
<b>INSTALLATION SUBSYSTEM</b>								
Control & monitoring DDR		1Q						
Wet End Capsule DDR	2Q							
Trunk Capsule & concatenation DDR	4Q							
NUWC Tank tests		3Q						
<b>DRY END SUBSYSTEM</b>								
Comm & Relay Van SDB RFP	3Q							
CARV SDB contract award	3Q							
CARV assembly		3Q						
CARV integration			1Q					
DES design verification test			2Q					
<b>SYSTEM TESTS</b>								
Dual Array test		3Q						
Dockside Integration test		4Q						
System Integration Test			2Q					
TECHEVAL			4Q					
OPEVAL			4Q					
<b>PRODUCTION READINESS REVIEW</b>				1Q				

R-1 SHOPPING LIST - Item No.

136

# UNCLASSIFIED

**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 11 of 23)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System				PROJECT NUMBER AND NAME X9085/ ACCELERATE CABLE BURIAL CAPABILITY					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		<b>3.928</b>									<b>3.928</b>
RDT&E Articles Qty											<b>0</b>

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

X9085 Cable Burial Capability- Enhance ADS cable survivability and provide a trunk extension installation capability

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X9085/ ACCELERATE CABLE BURIAL CAPABILITY

**(U) B. Accomplishments/Planned Program**

<b>CABLE BURIAL</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.928			
RDT&E Articles Quantity				

FY02: (\$3,928K) Accelerated cable burial capability incorporating larger diameter cable and surface ship deployment leveraging the dual application program burial sled. Conducted in water design verification test.

R-1 SHOPPING LIST - Item No. 136

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X9085/ ACCELERATE CABLE BURIAL CAPABILITY
---	--	--

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	3.928	0.000	0.000	0.000
Total Adjustments	<u>3.928</u>	0.000	0.000	0.000

Summary of Adjustments

ADS - Accelerate Cable Burial Capability	4.000			
Section 8123: Management Reform Initiative	-0.035			
Section 313: PL 107-206: Revised Economic Assumption	-0.008			
Section 8135: Economic Assumptions	-0.011			
Miscellaneous Navy Adjustments	<u>-0.018</u>			
Subtotal	3.928	0.000	0.000	0.000

(U) Schedule:  
Not applicable

(U) Technical:  
Not Applicable

R-1 SHOPPING LIST - Item No. 136

**UNCLASSIFIED**

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDTE, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X9085/ ACCELERATE CABLE BURIAL CAPABILITY
--	--	--

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
<b>OPN#2221</b>	0	0	0	35.427	67.395	80.552	89.194	105.152	Continuing	Continuing
<b>024311N/ Project X9102 IUSS MISSION PLANNING</b>	6.686	2.927	0	0	0	0	0			

Funds first increment of the Automated IUSS Mission Planning System. This effort builds on 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 segment what are at least level 6 DII-COE compliant. Included is approximately \$800K to collect environmental and physical data for an area of high fleet interest for mission planner demonstration.

**(U) E. ACQUISITION STRATEGY: \***

Milestone Category	FY02	FY03
<b>PROGRAM MILESTONES</b>		
<b>ENGINEERING MILESTONES</b>	SYSTEM REQUIREMENT REVIEW Q2, SYSTEM DESIGN REVIEW Q3	
<b>T&amp;E MILESTONES</b>	IN WATER PROTOTYPE TEST Q2	IN WATER DVT Q2 (DESIGN VERIFICATION TEST)
<b>CONTRACT MILESTONES</b>	JUSTIFICATION AND AUTHORIZATION FOR SOLE SOURCE AWARD Q3, CONTRACT AWARD FOR BURIAL SLED Q4	

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

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X9085/ ACCELERATE CABLE BURIAL CAPABILITY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
Government Engineering Support	WX	SSC SAN DIEGO, CA	0.704								0.704	0.676
Prime Mission Product	FFP	SOIL MACHINE DYNAMICS	2.474								2.474	2.500
Prime Mission Product	CPFF	LMFS MANASSAS, VA	0.704								0.046	0.789
Other Contracts			0.046								0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			3.928	0.000		0.000		0.000		0.000	3.928	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

**UNCLASSIFIED**

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X9085/ ACCELERATE CABLE BURIAL CAPABILITY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			3.928	0.000		0.000		0.000		0.000	3.928	
Remarks:												



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System				PROJECT NUMBER AND NAME X9086/ FIBER OPTIC TECHNOLOGY					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		<b>3.929</b>									<b>3.929</b>
RDT&E Articles Qty											<b>0</b>

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

X9086 Fiber Optic Technology- Reduced risk in development of remotely powered all optical array technology for application to ADS program.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X9086/ FIBER OPTIC TECHNOLOGY

**(U) B. Accomplishments/Planned Program**

FIBER OPTIC	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.929			
RDT&E Articles Quantity				

FY02: **(\$3,929)** - Reduced risk in fiber optical technology and integrated fiber optic technology application to rapidly deployable surveillance systems. Refurbished all optical array and changed to a remotely powered design. Determined deployment location and conduct required permits and surveys. Designed surface ship deployment method for all optical array and cable. Conducted in water design verification test and deployed system for end to end ADM testing. Developed and tested surface deployment handling system.

R-1 SHOPPING LIST - Item No. 136

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System	PROJECT NUMBER AND NAME X9086/ FIBER OPTIC TECHNOLOGY			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		3.929	0.000	0.000	0.000
Total Adjustments		3.929	0.000	0.000	0.000
Summary of Adjustments					
ADS - Fiber Optic Tech		4.000			
Section 8123: Management Reform Initiative		-0.035			
Section 313: PL 107-206: Revised Economic Assumption		-0.008			
Section 8135: Economic Assumptions		-0.011			
Miscellaneous Navy Adjustments		-0.017			
		3.929	0.000	0.000	0.000
(U) Schedule:					
Not Applicable					
(U) Technical:					
Not Applicable					

R-1 SHOPPING LIST - Item No. 136

# UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604784N/ Distributed Surveillance System			PROJECT NUMBER AND NAME X9086/ FIBER OPTIC TECHNOLOGY				
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost
<b>OPN#2221 024311N/ X9102 IUSS MISSION PLANNING</b>	0.000	0.000	0.000	35.427	67.395	80.552	89.194	105.152	Continuing 0	Continuing 9.613
<p>Funds first increment of the Automated IUSS Mission Planning System. This effort builder on 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 segment what are at least level 6 DII-COE compliant. Included is approximately \$800K to collect environmental and physical data for an area of high fleet interest for mission planner demonstration.</p>										
<b>(U) E. ACQUISITION STRATEGY: *</b>										
		FY02			FY03					
<b>PROGRAM MILESTONES</b>										
<b>ENGINEERING MILESTONES</b>		WET END SYSTEM VALIDATION REVIEW Q3								
<b>T&amp;E MILESTONES</b>					IN WATER DVT Q4 (DESIGN VERIFICATION TEST)					
<b>CONTRACT MILESTONES</b>		CONTRACT MODIFICATION Q3								
* Not required for Budget Activities 1,2,3, and 6										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X9086/ FIBER OPTIC TECHNOLOGY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prime Mission Product Development	C/CPFF	NORTHROP GRUMMAN	1.680	0.000		0.000		0.000			1.680	1.760
Government Engineering Support	WX	SSC-SAN DIEGO,CA	2.095	0.000		0.000		0.000			2.095	2.051
		OTHER CONTRACTS	0.154	0.000		0.000		0.000			0.154	0.154
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			3.929	0.000		0.000		0.000		0.000	3.929	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
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: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604784N/ Distributed Surveillance System			X9086/ FIBER OPTIC TECHNOLOGY						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			3.929	0.000		0.000		0.000		0.000	3.929	
Remarks:												

R-1 SHOPPING LIST - Item No. 136

# UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>	R-1 ITEM NOMENCLATURE Program Element 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM
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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>724.911</b>	<b>1,708.900</b>	<b>2,171.736</b>	<b>2,226.004</b>	<b>1,999.481</b>	<b>1,647.984</b>	<b>1,309.257</b>	<b>1,056.953</b>
D2261/JSF SDD								

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

**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 maximum commonality among the variants, consistent with National Disclosure Policy (NDP), 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 and other International countries are participants in the JSF Program.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME Program Element 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME Project Unit (PU) No. D2261, JOINT STRIKE FIGHTER (JSF) SDD			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>724.911</b>	<b>1,708.900</b>	<b>2,171.736</b>	<b>2,226.004</b>	<b>1,999.481</b>	<b>1,647.984</b>	<b>1,309.257</b>	<b>1,056.953</b>
RDT&E Articles Qty					<b>6</b>	<b>8</b>		

This Program Element continues development efforts budgeted in program element 0603800N prior to FY 2002.

Quantity of 14 RDT&E articles reflect flight test articles; 8 ground test articles are also budgeted in SDD

**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 maximum commonality among the variants, consistent with National Disclosure Policy (NDP), 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 and other International countries are participants in the JSF Program.



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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD

**B. Accomplishments/Planned Program ( Breakout reflects USN, USAF, UK and other International funding)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1,623.047	3,462.052	4,515.000	4,571.000
RDT&E Articles Quantity				

FY02 commenced execution of System Development and Demonstration (SDD) for Air System with Lockheed Martin and F135 Propulsion System with Pratt & Whitney, including International Commonality Effort (ICE). FY03, FY04 and FY05 will continue SDD execution of the Air System and F135 Propulsion System, including ICE and commence Technology Maturation efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	26.921	174.684	100.000	231.000
RDT&E Articles Quantity				

FY02, FY03, FY04 and FY05 continue the General Electric F136 development for a second, interchangeable, JSF engine for competition in production (previously begun in associated program elements 0603800N and 0603800F).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	101.391	187.474	273.973	424.389
RDT&E Articles Quantity				

FY02 commenced SDD Systems Engineering (SE) and Mission Support activities, including modeling, simulation and analysis (MS&A) efforts, risk reduction activities and program office functions. FY03, FY04 and FY05 will continue SE and Mission Support activities and commence technology maturation efforts.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD

**B. Accomplishments/Planned Program (Cont.)**

<b>GRAND TOTAL</b>	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1,751.359	3,824.210	4,888.973	5,226.389
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 137

**UNCLASSIFIED**

**Exhibit R-2a, RDTEN Project Justification**  
(Exhibit R-2a, page 4 of 13)

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD

**C. PROGRAM CHANGE SUMMARY:**

Funding:	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Previous President's Budget:	762.957	1,727.500	1,931.753	2,489.103
Current President's Budget	724.911	1,708.900	2,171.736	2,226.004
Total Adjustments	-38.046	-18.600	239.983	-263.099
Summary of Adjustments				
Congressional program reductions		-10.000		
Congressional undistributed reductions		-10.601		
Congressional rescissions	-1.633			
Congressional increases		29.750		
SBIR/STTR Transfer	-19.385			
Economic Assumptions	-2.029	-27.749	-50.911	-47.995
Reprogrammings	-14.999			
SPONSOR/FMB/NAVAIR Adjustments			290.894	-215.104
Subtotal	-38.046	-18.600	239.983	-263.099

Schedule:  
Not Applicable.

Technical:  
Not Applicable.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD
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**D. OTHER PROGRAM FUNDING SUMMARY:** This is a joint program with no executive service. Program Element 0604800F continues USAF development efforts budgeted in 0603800F prior to FY 2002. The United Kingdom and multiple other countries are participants in the SDD phase of JSF.

<u><b>RDT&amp;E:</b></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>FY 2008</u>	<u>FY 2009</u>
0604800F	720.058	1,697.810	2,194.087	2,242.485	1,992.356	1,640.118	1,302.679	1,046.762
United Kingdom	95.000	161.000	200.000	356.000	384.500	355.200	266.200	85.000
Canada	56.000	6.200	6.920	7.520	7.480	5.320	2.870	1.580
Denmark	3.200	7.400	7.700	24.030	23.980	21.910	14.510	4.110
Netherlands	48.000	90.000	103.000	123.000	133.000	120.000	76.000	28.000
Norway	7.890	8.950	22.980	24.700	24.590	15.380	8.290	4.560
Italy	85.000	104.000	126.000	152.000	171.000	154.000	98.000	36.000
Turkey	11.300	25.700	28.700	31.200	31.000	22.100	11.900	6.500
Australia		14.250	27.850	39.450	29.950	15.000	8.500	5.000

**RELATED RDT&E:** Funding prior to JSF SDD (FY94-FY01): USN PE 0603800N \$1,950.617; USAF PE 0603800F \$1,907.352; DARPA PE 0603800E \$118.006; UK \$201.221; Multi-Lateral \$32.100; Canada \$10.600; and Italy \$10.000 for a total of \$4,229.896.

<u><b>RELATED PROCUREMENT:</b></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>FY 2008</u>	<u>FY 2009</u>
0214146N (Quantity)				48.696	744.041 (4)	1,293.365 (8)	3,550.168 (29)	5,496.110 (52)
0207142F (Quantity)				70.833	992.385 (6)	1,733.950 (14)	1,981.764 (20)	2,872.598 (30)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD			
	<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>FY 2008</u>	<u>FY 2009</u>	
<b><u>RELATED SPARES AND REPAIR PARTS:</u></b>									
USN					15.002	34.107	28.979	23.238	
<b><u>RELATED MILCON:</u></b>									
0207142F			19.060	10.300	0.000	0.000	104.100	93.000	
91211F			1.000	0.900					
24146N			24.370						

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261, JOINT STRIKE FIGHTER (JSF) SDD
<p><b>E. ACQUISITION STRATEGY:</b></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"><li>(1) facilitated the Services' development of fully validated, affordable operational requirements;</li><li>(2) lowered risk by investing in and demonstrating key leveraging technologies that lowered the cost of development, production and ownership; and</li><li>(3) demonstrated operational concepts.</li></ul> <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 &amp; 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>		

R-1 SHOPPING LIST - Item No. 137

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0604800N, JOINT STRIKE FIGHTER (JSF) PROGRA				D2261, JOINT STRIKE FIGHTER SDD					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hdw Develop - Air System	C/CPAF	Lockheed Martin, Ft. Worth TX	851.493	2,707.796	10/02	3,777.000	10/03	3,683.000	10/04	TBD	TBD	19,041.545
Award Fees (Non-Add -Budgeted)			(83.333)	(195.902)		(302.000)		(337.000)				
Award Fees (% Funded to Date)			100%	0%								
Primary Hdw Develop - F135 Engine	SS/CPAF	Pratt & Whitney, Hartford CT	763.242	754.256	10/02	738.000	10/03	888.000	10/04	TBD	TBD	4,833.785
Award Fees (Non-Add -Budgeted)			(62.365)	(82.833)		(90.000)		(91.000)				
Award Fees (% Funded to Date)			100%	0%								
Prim Hdw Dev	SS/BOA	Pratt & Whitney	8.312									
<b>Subtotal SDD</b>			1,623.047	3,462.052		4,515.000		4,571.000		TBD	TBD	
Primary Hdw Dev - F136 Eng Phase IIIb	SS/CPAF	General Electric, Cincinnati OH	26.921	174.684	10/02	100.000	10/03	22.000	10/04	TBD	TBD	425.498
Award Fees (Non-Add - Budgeted)			(8.001)	(11.056)		(14.000)		(5.000)				
Award Fees (% Funded to Date)			100%	0%								
Primary Hdw Dev - F136 Eng Phase IV	SS/TBD	General Electric						209.000		TBD		
Award Fees (Non-Add)												
System Eng/Mission Support	Various	Field Activities	82.380	159.755	10/02	240.668	10/03	395.046	10/04	TBD	TBD	
	Various	Miscellaneous	5.775	5.150	10/02	5.200	10/03	5.400	10/04	TBD	TBD	
	C/CPAF	Sverdrup/Anteon, Arlington VA	3.150	4.975	12/02	5.124	12/03	5.278	12/04	TBD	TBD	
	SS/CPFF	LSI/Veridian, Patuxent River MD	4.709	6.719	12/02	6.921	12/03	7.127	12/04	TBD	TBD	
<b>Subtotal System Eng/Mission Support</b>			96.014	176.599		257.913		412.851			TBD	
<b>Subtotal Product Development</b>			1,745.982	3,813.335		4,872.913		5,214.851		TBD	TBD	

Remarks:  
 Cost to Complete and Total Cost are TBD pending completion of the December 2002 Selected Acquisition Report (SAR).  
 The GE Target Value of Contract reflects the negotiated value of the current Phase IIIb.

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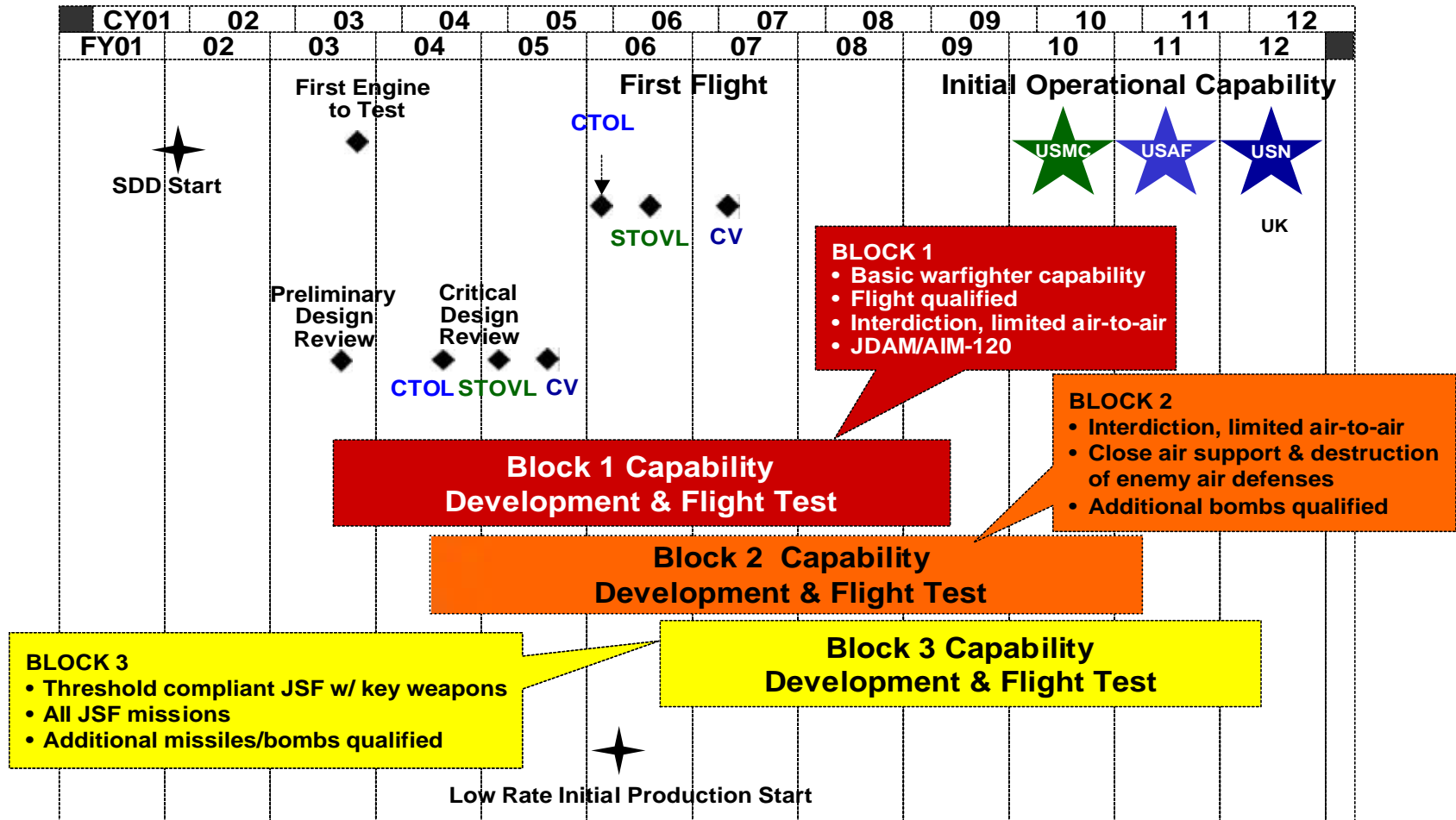
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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM			D2261 / JOINT STRIKE FIGHTER SDD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Included in Product Development												0.000
												0.000
												0.000
												0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Program Mgmt Support	SS/CPFF	Stanley, Arlington VA	3.836	8.555	10/02	13.670	10/03	9.076	10/04	TBD	TBD	
	SS/CPFF	Aegis, Arlington VA	1.541	2.320	12/02	2.390	12/03	2.462	12/04	TBD	TBD	
Subtotal Management			5.377	10.875		16.060		11.538		TBD	TBD	
Remarks:												
Total Cost			1,751.359	3,824.210		4,888.973		5,226.389		TBD	TBD	
Remarks: Prior Years reflect \$ 724.911 USN / \$720.058 USAF / \$95.000 UK / \$211.390 Other International / Total \$1,751.359 FY 2003 reflects \$1,708.900 USN / \$1,697.810 USAF / \$161.000 UK / \$256.500 Other International / Total \$3,824.210 FY 2004 reflects \$2,171.736 USN / \$2,194.087 USAF / \$200.000 UK / \$323.150 Other International / Total \$4,888.973 FY 2005 reflects \$2,226.004 USN / \$2,242.485 USAF / \$356.000 UK/ \$401.900 Other International / Total \$5,226.389												

EXHIBIT R4, Schedule Profile		DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261 / JOINT STRIKE FIGHTER SDD	

# System Development and Demonstration (SDD) Schedule



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Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT 0604800N / JOINT STRIKE FIGHTER (JSF) PROGRAM			PROJECT NUMBER AND NAME D2261 / JOINT STRIKE FIGHTER SDD				
Schedule Profile		FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B and Award of SDD Contract		1Q							
Air System Requirements Review (ASRR)		2Q							
Integrated Baseline Reviews at Lockheed Martin, Pratt & Whitney and GE		2Q-3Q							
Preliminary Design Review (PDR) for Air System			3Q						
Critical Design Reviews (CDRs) for Three Variants				3Q	1Q-3Q				
CTOL First Flight						1Q			
STOVL First Flight						3Q			
CV First Flight							2Q		
First Operational Aircraft Delivered								3Q	
USMC Initial Operational Capability (IOC)									
USAF IOC									
USN IOC									
Milestone C									

R-1 SHOPPING LIST - Item No. 137

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**Exhibit R-4a, Schedule Detail**  
(Exhibit R-4a, page 13 of 13)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5      Engineering &amp; Manufacturing</b>					R-1 ITEM NOMENCLATURE 0604910N Navy IT DEV / MOD			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE0604910N Cost	0.844	0.695	0.552	0.697	0.712	0.727	0.740	0.754
Smart Card Program	0.844	0.695	0.552	0.697	0.712	0.727	0.740	0.754
Quantity of RDT&E Articles	<b>Not Applicable</b>							
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Department of the Navy e-Business Operations Office is chartered to provide leading edge enabling technologies to Sailors and Marines through the use of a single multi-functional Smart Card, now referred to as the Common Access Card (CAC). Investigation of new technologies will be accomplished through interface proofs of concept demonstrating new Smart Card related technologies associated with the wireless industry, other industry standard operating systems, and biometric technology. Pilot demonstrations will also be conducted to identify and provide seed money for the development of software applications supporting functional requirements across the DoN. The goal of these projects will be to apply Smart Card Technology to streamlined processes enhancing cost effectiveness and improving operational readiness and quality of life.</p> <p>(U) B. JUSTIFICATION OF BUDGET ACTIVITY: Smart Card fund has been realigned from AAUSN to NAVSUP doing the FY 2003 Budget Review.</p>								

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604910N Navy IT DevMod				T2902 Smart Card Program			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.844</b>	<b>0.695</b>	<b>0.552</b>	<b>0.697</b>	<b>0.712</b>	<b>0.727</b>	<b>0.740</b>	<b>0.754</b>
RDT&E Articles Qty	<b>Not Applicable</b>							
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> The Department of the Navy e-Business Operations Office is chartered to provide leading edge enabling technologies to Sailors and Marines through the use of a single multi-functional Smart Card, now referred to as the Common Access Card (CAC). Investigation of new technologies will be accomplished through interface proofs of concept demonstrating new Smart Card related technologies associated with the wireless industry, other industry standard operating systems, and biometric technology. Pilot demonstrations will also be conducted to identify and provide seed money for the development of software applications supporting functional requirements across the DoN. The goal of these projects will be to apply Smart Card Technology to streamlined processes enhancing cost effectiveness and improving operational readiness and quality of life.</p>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT Dev\Mod	PROJECT NUMBER AND NAME T2902 Smart Card Program
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.844			
RDT&E Articles Quantity				

FY 02 funding will be used to initiate 3 pilot projects. Pilot project execution consists principally of proof of concept approach.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		0.695		
RDT&E Articles Quantity				

FY03 funding will be used to initiate 2-3 pilot projects to add functionality and utility to the CAC to enhance cost effectiveness and improve operational readiness and quality of life.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			0.552	
RDT&E Articles Quantity				

FY04 funding will be used to initiate 2-3 pilot projects to add functionality and utility to the CAC to enhance cost effectiveness and improve operational readiness and quality of life.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT DevMod	PROJECT NUMBER AND NAME T2902 Smart Card Program
---	--	---

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				0.697
RDT&E Articles Quantity				

FY05 funding will be used to initiate 2-3 pilot projects to add functionality and utility to the CAC to enhance cost effectiveness and improve operational readiness and quality of life.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT DevMod	PROJECT NUMBER AND NAME T2902 Smart Card Program		
<b>C. PROGRAM CHANGE SUMMARY:</b>				
Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	0.888	0.711	0.712	0.712
Current BES/President's Budget:	0.844	0.695	0.552	0.697
Total Adjustments	-0.044	-0.016	-0.160	-0.015
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions	-0.044	-0.016	-0.160	-0.015
SBIR/STTR Transfer				
Economic Assumptions				
Reprogrammings				
Congressional increases				
Subtotal	-0.044	-0.016	-0.160	-0.015
Schedule:				
Not Applicable				
Technical:				
Not Applicable				



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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0604910N Navy IT Dev\Mod			PROJECT NUMBER AND NAME T2902 Smart Card Program				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u>	Total <u>Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY: *</b>										
The milestone for all years is the completion of proof of concept initiatives for the benefit of the Department of Navy. In each of the fiscal years approximately 2-3 projects will be executed.										
<b>F. MAJOR PERFORMERS: **</b>										
Not Applicable										
* Not required for Budget Activities 1,2,3, and 6 ** Required for DON and OSD submit only.										

R-1 SHOPPING LIST - Item No. 138

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE:				
APPROPRIATION/BUDGET ACTIVITY										February 2003				
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
			0604910N Navy IT DevMod			T2902 Smart Card Program								
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	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	0.000	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604910N Navy IT DevMod				PROJECT NUMBER AND NAME T2902 Smart Card Program							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation				0.844	08/02	0.695	04/03	0.552	TBD	0.697	TBD		2.091	
Operational Test & Evaluation													0.000	
Tooling													0.000	
GFE													0.000	
Subtotal T&E			0.000	0.844		0.695		0.552		0.697		0.000	2.091	
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	0.000	
Remarks:														
Total Cost			0.000	0.844		0.695		0.552		0.697		0.000	2.091	
Remarks:														



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Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0604910N Navy IT DevMod				T2902 Smart Card Program			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 138

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>		<b>0605013M Marine Corps Information Technology</b>				<b>C2906 Marine Corps Information Technology DEV/MOD</b>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	10.219	7.894	8.835	11.722	8.615	4.486	4.489	4.730	Continuing	Continuing
RDT&E Articles Qty										

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

1. The CSSE Shared Data Environment (SDE), formerly know 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 Combatant Commander 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. Automated Information Technology (AIT) is the proper mix of a suite of technologies that enables the user to efficiently and effectively capture, aggregate, transfer data and, integrate with Logistics Automated Information Systems (LOG AIS) using the optimum technology. Individual user's data and information will be integrated with DoD-wide systems technologies, software, and encoding formats as well as international commercial applications. AIT will facilitate data collection and flow to other AISs to better achieve Total Asset Visibility (TAV), enhancing and streamlining business processes and warfighting capability. AIT will remain interoperable with current DoD applications and capable of assimilating process and technological advancements.
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 System (TFAS) will be used by commanders, staffs and individual Marines (active, reserve, retired), conducting centralized and decentralized processing of payroll and personnel administration information. This centralized database assists decision-making by providing improved quality of life services to the Marines. TFAS will integrate and share information between 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) - This program provides integrated personnel and pay functionality for all active, reserve, and retired Marines. This worldwide accessible database processes transactions at one location (Defense Mega-Center DMC) in St. Louis, MO, and is the USMC primary pay and personnel system.
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.

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>

7. DMS integrates Automatic Digital Network (AUTODIN) and E-Mail into a single, secure, DoD message communications system. DMS will expand writer-to-reader connectivity, support, and message security services. Organizations and individuals will be able to create, edit, send, receive, read, and process organizational and individual messages, secured with end-to-end protection, direct from desktop terminals/personal computers in their workspaces.

8. Marine Corps Recruiting Information Support Systems (MCRISS) is an electronic based system to automate administrative procedures for the recruiting substation (RSS) recruiter. This customized automated system, centered around procedures in the Volume I, Guidebook for Recruiters, will dramatically improve efficiency and effectiveness in this area. Furthermore, Military Entrance Processing Command (MEPCOM) requires Marine Corps recruiting to provide information in electronic format only.

9. HUMAN RESOURCE DEVELOPMENT PROCESS (HRDP) Portfolio (formerly Manpower AIS) is designed to manage acquisition of information technology capabilities for the modernization of processes supporting the lifecycle of Marines, from recruiting, accession, promotions, separations, retirements, performance evaluations. Efforts supported must include thorough review and analysis of business processes, re-engineering processes where technology can be leveraged for improvements. The funding in the HRDP Portfolio will provide the technical solution for process improvement, and will strategically align manpower systems/functional process modules with the C4 architecture.

10. Marine Corps Training, Exercise, and Employment Plan (MCTEEP) is a Windows-based, Marine Corps developed scheduling tool to standardize the "TEEP" process. MCTEEP software was first fielded in July 1995 to every G-3/S-3 in the operating forces. Funding transferred from C2270.

**(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:**

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.443</b>	<b>0.554</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				

**SDE:** Program support for configuration control board, system integration, integrated process team, and strategic plan update.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.125</b>	<b>0.225</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				

**SDE:** Development of incremental business implementation plan.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.203</b>	<b>0.620</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				

**SDE:** Data collection for incremental systems.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.144</b>	<b>0.288</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>		
<b>SDE:</b> Analyze legacy information systems for incremental structure.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.108</b>	<b>0.216</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Decomposition of legacy information systems for incremental structure.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.300</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Site survey.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.230</b>	<b>0.360</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Perform technical architecture assessment.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.300</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Register legacy IS in META-DATA repository.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.180</b>	<b>0.288</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Integrate legacy META-DATA into common data architecture.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.108</b>	<b>0.162</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Update CSSE data architecture.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.108</b>	<b>0.270</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Design target interface to include data transformation rules.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.235</b>	<b>0.504</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE:</b> Design target data mart decision support applications.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.180</b>	<b>0.270</b>	<b>0.000</b>	<b>0.000</b>



UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>		<b>0605013M Marine Corps Information Technology</b>		<b>C2906 Marine Corps Information Technology DEV/MOD</b>	
RDT&E Articles Qty					
<b>SDE:</b> Design target data warehouse database modifications.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.108</b>	<b>0.216</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Implement data warehouse increment into target environment.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.397</b>	<b>0.601</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Development and installation of necessary gateways.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.108</b>	<b>0.162</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Incorporation of legacy database increment.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.260</b>	<b>0.360</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Implementation data mart decision support applications.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.142</b>	<b>0.360</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Initiation of the legacy interfaces.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.162</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Implementation of data warehouse data mart increment.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.186</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					
<b>SDE:</b> Hardware business strategy analysis.					
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost		<b>0.000</b>	<b>0.058</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty					

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>		
<b>SDE:</b> COTS migration tools/licenses.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>SDE: MAGTF CSSE &amp; SE:</b> Design & development of web-enabling technologies, messaging backbone, and integration with air/ship/rail load and joint planning & execution tools. Efforts to migrate legacy system data and interfaces to the Shared Data Environment. Funding for this effort in FY02 and FY03 is provided under Project C2510, Program Element 0206313M, MC Communication Systems.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.138</b>	<b>0.290</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>AIT:</b> Develop software with AIT capabilities in conjunction with the DOD AIT implementation plan.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.136</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>AIT:</b> Program Management Support.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.416</b>	<b>0.300</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFAS:</b> Incorporate requirements for developing software tasks and integrating software changes into existing system.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.414</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFAS:</b> Developmental study of user requirements for operating system.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.238</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFAS:</b> Independent Verification & validation testing of software.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>2.300</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Complete software integration/customatization and interfaces of the desktop pilot.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.095</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>		<b>C2906 Marine Corps Information Technology DEV/MOD</b>	
<b>TFSMS:</b> Complete identifying and documenting software interfaces.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.200</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Development of users manuals, and training plan materials.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Complete software testing.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.122</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Complete peer reviews and inspections.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.080</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Complete the software transition plan.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.120</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>TFSMS:</b> Development of TFSMS to include refinement of the system's technical software architectures.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.776</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>MCTFS:</b> Complete development of web server migration, DIMHRS interface and TFAS interface development to add user functions to UD/MIPS SELMS module.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>1.139</b>	<b>0.484</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>PES:</b> Development of electronic signature capability, database access, web-based applications, and technology refreshments. Development of the software to maintain consistency with security practices and policies.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.200</b>	<b>0.455</b>
RDT&E Articles Qty				

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>

**DMS:** OTE and DTE testing.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.195</b>	<b>0.000</b>
RDT&E Articles Qty				

**DMS:** 3.0 and DMDS testing.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.529</b>	<b>2.101</b>
RDT&E Articles Qty				

**HUMAN RESOURCE DEV PROCESS (HRDP):** Development of modules to integrate existing systems to streamline dataflow and increase reliability, functionality, and accuracy while reducing the manpower required to operate and maintain these systems. This includes the web-enablement of systems to provide centralized access and provide greater functionality and reliability while reducing maintenance requirements and the re-engineering of systems due to regulatory and policy changes mandated by Congress, DoD, DoN, and USMC. This integration will migrate the current Total Force Administration System (TFAS), Monitor Assignment Support System(MASS), Defense Casualty Information Processing System (DCIPS), Performance Evaluation System (PES), Total Force Retention System (TFRS), Defense Personnel Records Imaging System (DPRIS), Automated Claims Information System (ACIS), CASA/RASA/DASH (Class I/II/III), and Marine Corps Medical Entitlements Data System (MCMEDS) to an integrated Detailed Planning and Current Operations System over the long-term.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.505</b>	<b>2.151</b>
RDT&E Articles Qty				

**HUMAN RESOURCE DEV PROCESS (HRDP):** Re-engineering of long-term planning tools which are integral to the decision support processes of the HRDP. The current models, in use in various form since 1960, are completely dependent on the current support contractor and do not include the documentation or software rights necessary to turn an enhancement effort over to another support source. Consequently, a major requirements analysis and process re-engineering effort is required to improve the capability of the Marine Corps to effectively plan, assign, classify, and distribute the force. This re-engineering effort will provide the technical integration of the models with the core planning systems which utilize outputs of the models, and will include integration of Reserve requirements into the HRDP Master Planning System.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>1.000</b>	<b>1.199</b>
RDT&E Articles Qty				

**HUMAN RESOURCE DEV PROCESS (HRDP):** Development of a Civilian Marine Workforce Management System which will enhance the ability of the Marine Corps to plan for the best use of its civilian workforce and execute that plan. Initial effort is focused on Civilian Career and Leadership Development (CCLD).

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.237</b>	<b>0.843</b>
RDT&E Articles Qty				

**HUMAN RESOURCE DEV PROCESS (HRDP):** Testing and evaluation of the modules and integration of those modules into the Detailed Planning and Current Operations System.

COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.270</b>	<b>0.765</b>
RDT&E Articles Qty				

UNCLASSIFIED

**EXHIBIT R-2a, RDT&E Project Justification**

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>		<b>C2906 Marine Corps Information Technology DEV/MOD</b>	
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Testing and evaluation of re-engineered Master Planning System.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.265</b>	<b>0.355</b>
RDT&E Articles Qty				
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Testing and evaluation of the Civilian Workforce Management System.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.210</b>	<b>0.372</b>
RDT&E Articles Qty				
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Provide support for the development and integration of modules into the Detailed Planning and Current Operations System.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.350</b>	<b>0.350</b>
RDT&E Articles Qty				
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Provide support for Joint HRDP systems where the Marine Corps is obligated to provide support to a program run from a Joint Program Office.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.200</b>	<b>0.432</b>
RDT&E Articles Qty				
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Implement support for the re-engineering of the planning tools.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.135</b>	<b>0.153</b>
RDT&E Articles Qty				
<b>HUMAN RESOURCE DEV PROCESS (HRDP):</b> Implement support for the development of the Civilian Workforce Management System.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>2.370</b>	<b>2.171</b>
RDT&E Articles Qty				
<b>MC RECRUITING INFO SUPT SYS (MCRISS):</b> Design and development of web enabling technologies for MCRISS-NCOIC; verify and validate requirements for automating information management; incremental design and development of software; and testing of the design interface with existing system components.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.000</b>	<b>0.000</b>	<b>0.369</b>	<b>0.375</b>
RDT&E Articles Qty				
<b>MC TRAINING EXERCISE EMPL PLAN (MCTEEP) - Database Evaluation and Conversion.</b> System Architecture Evaluation for Optimal System Performance. Creation of Situation Report (SitRep) and Operational Summary (OpSum). Continue the development, integration, testing and fielding of selected MCTEEP web enabling Software upgrades to enhance the capabilities of MCTEEP. The prospective S/W modifications include; 1) incremental upgrades to accomplish progressively higher levels of DII / COE compliance, 2) increased data sorting, correlation and filtering capabilities to further facilitate rapid responses to complex information requests and, 3) transition from the current Sybase licensed data-base management system (DBMS) to a DBMS having better long term supportability. Funding for this effort in FY02 and FY03 is provided under Project C2270 within PE 0206313M.				

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>		<b>C2906 Marine Corps Information Technology DEV/MOD</b>	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.325</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>MCWL IMS</b>				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	<b>0.499</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty				
<b>FIMS II</b>				
<b>(U) Total \$</b>	<b>10.219</b>	<b>7.894</b>	<b>8.835</b>	<b>11.722</b>

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2003

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5 System Dev and Demonstration (SDD)	0605013M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD

**(U) PROJECT CHANGE SUMMARY**

<b>(U) FY 2003 President's Budget:</b>	<b>FY2002</b>	<b>FY2003</b>	<b>FY2004</b>	<b>FY2005</b>
(U) Adjustment from the President's Budget:	10.934	8.079	6.119	6.513
(U) Congressional Program Reductions				
(U) Congressional Rescissions				
(U) Congressional Increases			-0.219	-0.253
(U) Reprogrammings	-0.525		2.935	5.462
(U) SBIR/STTR Transfer	-0.037			
(U) Minor Affordability Adjustment	-0.153	-0.185		
<b>(U) FY 2004 President's Budget:</b>	<b>10.219</b>	<b>7.894</b>	<b>8.835</b>	<b>11.722</b>

CHANGE SUMMARY EXPLANATION:

- (U) Funding: Change in FY02 reflects minor affordability adjustments to various Marine Corps Programs. Change in FY04 and FY05 is due to realignment of programs within the Marine Corps.
- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY2009</b>	<b>To Complete</b>	<b>Total Cost</b>
(U) PMC BLI # 464100 HRDP	0	0	3626	1532	1150	1545	1449	1123	Cont	Cont
(U) PMC BLI# 464100 MAGTF LOG AIS	2004	1975	0	0	0	0	0	0	0	3979
(U) PMC BLI#464100 TFAS	1022	2842	0	0	0	0	0	0	0	3864
(U) PMC BLI#464100 MAGTFCSSE&SE	3400	4456	0	0	0	0	0	0	0	7856
(U) PMC BLI#463400 DMS	0	3938	0	0	0	0	0	0	0	
(U) PMC BLI#463500 DMS	0	0	7753	8266	2956	436	9088	454	0	
(U) PMC BLI#464100 PES	0	980	0	0	0	0	0	0	0	980

**(U) Related RDT&E: Not Applicable.**

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>
<p><b>(U) D. ACQUISITION STRATEGY:</b></p> <p><b>TFAS</b> - The operational Data Store Enterprise (ODSE) will serve as the primary database for TFAS. The acquisition strategy is to leverage the evolutionary acquisition approach, whereby functionality is incrementally added as requirements are specified. As a systems integration effort, TFAS does not replace, but provides access to legacy systems. Access will be provided to Marines at the appropriate level of authority to view, change and input selected information.</p> <p><b>MCTFS</b>: 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.</p> <p><b>SDE</b> - MS A 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 discrete components. The contracts will be competitively awarded through GSA schedules. The contract will be for a base period with options for four additional years.</p> <p><b>DMS</b>: DMS is a Joint ACAT1AM program. It is ASD (C3I) - mandated. Each year Joint Inter-Operability Testing Center (JTIC) runs an Operational Test assessment on DMS software version, maintenance releases. The fund support Marine Corps Operations Test Activity (OTA). Marine Corps participation is vital to ensuring the Marine Corps implementation of DMS is interoperable with all DOD CINCs/Services/Agencies.</p> <p><b>MCRISS</b>: Development will remain consistent with established DOD, DON, and USMC standards and policies for interoperability, security and standardization. Capitalizing on centrally located data with secure web and wireless web enabled entry</p> <p><b>HRDP</b>: In accordance with Clinger-Cohen Act, business process reviews are conducted to determine the optimal business case for enhancing the family of systems. Within the HRDP family of systems, there are programs designed to fulfill requirements defined by a broad range of stakeholders within the HRDP. Acquisition strategies are in place for each defined set of requirements. The HRDP Portfolio as a whole leverages evolutionary acquisition to incrementally fulfill these requirements while keeping an integrated technical architecture as the central</p> <p><b>MCTEEP</b>: Competitively award a cost plus fixed fee contract in 2nd qtr FY04. R&amp;D component of this contract will be web enabling software upgrades to further develop the capabilities of the MCTEEP variant, the M. C. Database Management Tool.</p> <p><b>(U) E. MAJOR PERFORMERS:</b></p> <p><b>SHARED DATA ENVIRONMENT</b></p> <p>FY02 - BAH, McLean, VA, Software development and proof of concepts, Jan 2001</p> <p>FY03 - Contracting information is currently unavailable, contractor will be selected during year of execution, anticipated Jan 2003</p> <p><b>AIT</b></p> <p>FY02 - NAWC, St Inigoes, CA, Software development with AIT capabilities in conjunction with the DOD implementation plan, Dec 2001</p> <p>FY03 - NAWC, St Inigoes, CA, Software development with AIT capabilities in conjunction with the DOD implementation plan, Jan 2003</p> <p><b>TFAS</b></p> <p>FY02 - DFAS Kansas City, MO, Development of software, integration software changes into existing system, May 2002</p> <p>FY03 - DFAS Kansas City, MO, Verification and validation testing of software; Jan 2003</p> <p><b>TFSMS</b></p> <p>FY02 - KPMMG, Sacramento, CA, Development, integration and preparation for implementation of TFSMS, Jan 2002</p> <p>FY03 - Contracting information is currently unavailable, contractor will be selected during year of execution, anticipated Mar 2003</p>		



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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N /BA-5 System Dev and Demonstration (SDD)</b>	<b>0605013M Marine Corps Information Technology</b>	<b>C2906 Marine Corps Information Technology DEV/MOD</b>
<p><b>PES</b>  FY02 - Stanley, INC., Alexandria, VA, Development of electronic signature capability, database access, web-based applications, and technology refreshments, Aug 2002..  FY03 - Contracting information is currently unavailable, contractor will be selected during year of execution, anticipated Mar 2003</p> <p><b>MCTFS (SELMS)</b>  FY02 - DFAS Kansas City, MO, Development of web server migration, DIMHRS interface and TFAS interface development to add user functions to UD/MIPS SELMS module, Mar 2002</p> <p><b>DMS</b>  FY04 - MCOTEA. Quantico, VA, Operational Test and Evaluation and Developmental Test and Evaluation testing, Mar 2004  FY05 - MCOTEA. Quantico, VA, 3.0 and DMDS testing, Jan 2005</p> <p><b>MCWL IMS</b>  FY02 - System Management, Solomons, MD, Development of an Information Management Database System, Jan 02</p> <p><b>FIMS II</b>  FY02- Baring Point (formally KPMG), Stafford, VA, Development of interface with Oracle General Ledger and Procurement Request (PR) builder.</p> <p><b>MCRISS</b>    FY04 - Federal Systems Integration and Management Center (FEDSIM), Falls Church, VA, Design and development of web enabling technologies for MCRISS-NCOIC, Jan 2004  FY05 - Federal Systems Integration and Management Center (FEDSIM), Falls Church, VA, Design and development of web enabling technologies for MCRISS-NCOIC, Jan 2005</p> <p><b>HRDP</b>  FY04 - This is a new start program. Contracting information is currently unavailable, anticipated Jan 2004  FY05 - Contracting information is currently unavailable, contractor will be selected during year of execution, anticipated Jan 2005</p> <p><b>MCTEEP</b>  FY04 - Contracting information is currently unavailable, anticipated Jan 2004  FY05 - Contracting information is currently unavailable, contractor will be selected during year of execution, anticipated Jan 2005</p>		



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Exhibit R-3 Cost Analysis											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N /BA-5 System Development and Demonstration (SDD)			0605013M Marine Corps Information Technology					C2906 Marine Corps Information Technology DEV/MOD						
Cost Categories	Method & Type	Activity & Location	PY s Cost	FY 02 Cost	FY02 Award Date	FY 03 Cost	FY03 Award Date	FY 04 Cost	FY04 Award Date	FY 05 Cost	FY05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TFAS	TBD	TBD				0.238	01/03						0.238	
TFSMS	TBD	MCSC, Quantico, VA	0.150	0.150	12/01								0.300	
DMS	WR	MCOTEA						0.200	03/04	0.455	01/05		0.655	
DMS	RC	CRANE						0.195	01/04				0.200	
Subtotal T&E			0.150	0.150		0.238		0.395		0.455		0.000	1.388	
Remarks:														
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY03 Award Date	FY 04 Cost	FY04 Award Date	FY 05 Cost	FY05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AIT	RCP	NAWC, ST. INIGOES	0.000	0.136	12/01									
HRDP	TDB	TBD						0.895	01/04	1.307	01/05	Cont	Cont	
Subtotal Management			0.000	0.136		0.000		0.895		1.307		0.000	2.338	
Remarks:														
Total Cost			4.777	10.219		7.894		8.835		11.722		Cont	Cont	

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY</b>				BA-5	R-1 ITEM NOMENCLATURE <b>NAVY INFO TECH DEV/MOD 0605013N</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	63.487	73.314	30.562	25.135	10.033	10.520	10.681	11.160
AAUSN IT 52901	3.386	1.310	0.950	1.311	1.311	1.312	1.337	1.362
SPAWAR IT 62907/X3042/X3054/X9088/X9089	19.350	30.787	1.319	1.337	0.797	0.770	0.784	0.799
BUPERS IT L2905	15.709	12.996	11.061	8.214	1.539	1.959	1.959	2.274
NAVSEA IT S2904/S9090/S9258/S9259	7.597	11.018	7.316	4.187	4.051	4.083	4.160	4.238
NAVAIR IT W2903	3.869	2.423	2.292	2.304	2.335	2.396	2.441	2.487
NAVSUP IT T3005/Z1742	13.576	14.780	7.624	7.782	0.000	0.000	0.000	0.000

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 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 (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. Task Force Web (TFW) is responsible for the development of the infrastructure needed for the Web Enabled Navy. The Web Enabled Navy is currently researching, developing and implementing a overall plan to take advantage of web technologies to create integrated and transformational information exchange for the Navy. The goal is to better enhance the Navy's capability to perform combat/mission support in a fully mobile, joint environment for both deployable and non-deployable units. Through Web enabling technologies, Navy personnel will have the ability to tailor the information flow and information access to meet their requirements.

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY</b>	<b>BA-5</b>	<b>NAVY INFO TECH DEV/MOD 0605013N</b>	
<p><u>PROJECT S2904</u> (Cont.) - 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.</p> <p><u>PROJECT S9090</u> - Total Feet Support System - This project will provide 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 cost. This includes program management and technical support, enhancements and integration of ITD system, software, hardware changes, within the (DS) capabilities. It includes software development and upgrades for ITD systems and software, and COTS software packages/systems/hardware. This also includes development testing and certification.</p> <p><u>PROJECT S9259</u> - CBM Enabling Technologies - This project's goal is to identify and deploy cost-saving ship maintenance enabling technologies supporting the Navy's CBM strategy. CBM implementation is a significant enabler of Department of the Navy's (DoN) affordability objectives. CBM is the core component of "CBM Plus", one of six initiatives included in the DUSD (L&amp;MR) Future Logistics Enterprise "The Way Ahead" dated 3 June 02. This project will analyze, demonstrate and assess CBM-enabling technologies for both next-generation ships (e.g., DD(X) and CVNX) as well as for back-fit in legacy ship classes.</p> <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 R9259</u> - Institute for Systems Test and Evaluation</p>			

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0605013N / NAVY IT Dev/Mod			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost (0605013N - E5EB)	<b>3.386</b>	<b>1.310</b>	<b>0.950</b>	<b>1.311</b>	<b>1.311</b>	<b>1.312</b>	<b>1.337</b>	<b>1.362</b>
52901 / AAUSN IT	<b>3.386</b>	<b>1.310</b>	<b>0.950</b>	<b>1.311</b>	<b>1.311</b>	<b>1.312</b>	<b>1.337</b>	<b>1.362</b>

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This RDT&E Project supports, in part, Navy Secretariat staff level efforts in the areas of paperless acquisition and information technology, acquisition strategic planning and business management, and other acquisition reform areas such as knowledge management. In 1997, a Deputy Secretary of Defense directive was issued calling for paper-free acquisition processes by 1 January 2000. While the Department of the Navy has made significant strides toward this goal, additional capabilities and continued support are required.

In addition, FY 2002 project funding is for contract labor support to enhance Standard Labor Data Collection and Distribution Application (SLDCADA) to encompass the Time and Attendance requirements of aviation 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.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N / NAVY IT Dev/Mod			PROJECT NUMBER AND NAME 52901 (E5EB) / AAUSN IT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>3.386</b>	<b>1.310</b>	<b>0.950</b>	<b>1.311</b>	<b>1.311</b>	<b>1.312</b>	<b>1.337</b>	<b>1.362</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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In addition, FY 2002 project funding is for contract labor support to enhance Standard Labor Data Collection and Distribution Application (SLDCADA) to encompass the Time and Attendance requirements of aviation 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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N / NAVY IT Dev/Mod	PROJECT NUMBER AND NAME 52901 (E5EB) / AAUSN IT
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**B. Accomplishments/Planned Program**

ASN (RD&A)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.031	1.310	0.950	1.311
RDT&E Articles Quantity				

FY 2002 Accomplishments: Continuation of the efforts in implementing an electronic end-to-end contracting acquisition process. Specific initiatives include continuing the design and development of the business architecture, continuing the development of the Universal Interface and requirements generation software, and for the design and testing of the electronic invoicing system (Wide Area Work Flow - WAWF).

FY 2003 - 2005 Plan: Continue staff acquisition and business management improvements. This includes acquisition career management tasks and associated tasks required to comply with Defense Acquisition Workforce Improvement Act (DAWIA) mandates, acquisition reform tasks such as knowledge management, and overall DOD acquisition strategic planning. Continue the development of the business architecture for the Universal Interface integration of DoN financial and requirements systems to one another and to Standard Procurement System (SPS, the DoD mandated contract writing software), and for Purchase Request (PR) Builder interfaces/iterative development and WAWF.

OCHR (SLDCADA)	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.355	0.000	0.000	0.000
RDT&E Articles Quantity				

Complete deployment of SLDCADA, including modifications for NWCf ERP/SLDCADA interface at shipyards and Navy depots, OCONUS sites and for Marine Corps logistics bases. Complete Sybase to Oracle conversion at legacy SLDCADA sites. Migrate from timekeeper to employee desktop processing. 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. Initial ERP/SLDCADA interface requirements captured for shipyards and Navy depots.



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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N / NAVY IT Dev/Mod	PROJECT NUMBER AND NAME 52901 (E5EB) / AAUSN IT			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY03 President's Budget		3.216	1.338	1.340	1.339
FY04 President's Budget		3.386	1.310	0.950	1.311
Total Adjustments		0.170	-0.028	-0.390	-0.028
Summary of Adjustments					
Business Process Reform			-0.005		
IT Cost Growth			-0.002		
Inflation Savings			-0.014	-0.084	-0.028
SLDCADA Low Execution				-0.306	
Economic Assumptions		-0.018	-0.007		
Below Threshold Reprogrammings		0.188			
Total Summary of Adjustments		0.170	-0.028	-0.390	-0.028
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 140 - 6 of 140 - 99

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0605013N / NAVY IT Dev/Mod				PROJECT NUMBER AND NAME 52901 (E5EB) / AAUSN IT				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>											
		<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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
AAUSN	<u>Line Item No. &amp; Name</u>										
	OP,N / 810600 / Command Support Equipment	1.299	0	0	0	0	0	0	0	1.299	1.299
 <b>E. ACQUISITION STRATEGY:</b>											
<p>RDT&amp;E funding is being used by ASN(RD&amp;A) ABM's Strategic Business Management Office (SBM-formerly EA21, Paperless Acquisition) in support of the Navy's efforts to achieve an electronic end to end contract acquisition process. To achieve this goal, the funding is used for several initiatives: Business Architecture, SPS Universal Interface, Wide Area Workflow, and PR Builder. The Director of SBM is responsible for the program management oversight of these initiatives. In order to obtain the deliverables and required services, delivery orders are placed against existing General Service Administrative Contract vehicles. The contracting Officer assigned to the office conducts the appropriate competitions and competitive pricing for selection.</p>											
 <b>F. MAJOR PERFORMERS:</b>											
<p>Bearing Point - Arlington, VA PWC Consulting - Fairfax, VA</p>											

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N / NAVY IT Dev/Mod			52901 (E5EB) / AAUSN IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs (01-02) Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY's 06-09 Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development	GSA			0.250	02/03	0.193	10/03	0.250	10/04	1.014	1.707	
Component Development	GSA	Bearing Point, Arl. VA	1.787	0.300	02/03	0.231	10/03	0.300	10/04	2.311	4.929	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	GSA	Bearing Point, Arl. VA	2.109	0.542	02/03	0.356	10/03	0.542	10/04	1.105	4.654	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			3.896	1.092		0.780		1.092		4.430	11.290	
Remarks: Funding will be used to continue the development of the business architecture, for the Universal Interface integration of DoN financial and requirements systems to one another and to SPS, and for PR Builder interfaces/iterative development..												
Development Support											0.000	
Software Development	IDIQ	OCHR, Wash DC	2.294								2.294	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.294	0.000		0.000		0.000		0.000	2.294	
Remarks:												

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N / NAVY IT Dev/Mod			52901 (E5EB) / AAUSN IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs (01-02) Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY's 06-09 Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	FFP	PWC Consulting, Fairfax VA	1.848	0.218	10/02	0.170	10/03	0.219	10/04	0.892	3.347	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			1.848	0.218		0.170		0.219		0.892	3.347	
Remarks: Funding will be used for Wide Area Work Flow support and testing.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			8.038	1.310		0.950		1.311		5.322	16.931	
Remarks:												

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE 0605013N Navy Information Technology Dev/Mod					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	11.850	19.350	30.787	1.319	1.337	0.797	0.770	0.784	0.799	Continuing	Continuing
62907 COMNAVRESFOR IT	2.531	2.754	3.981	1.319	1.337	0.797	0.770	0.784	0.799	Continuing	Continuing
69089 Long Distance Learning	0.000	0.000	9.535	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.535
X3054 Navy Web Enabling	6.227	8.629	2.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.889
X3042 Defense Software Productivity Initiative (DSPI)	3.092	2.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.770
X9088 SPAWAR ITC Enterprise Management	0.000	4.332	5.867	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.199
X9089 Secure Interactive Distributed Learning (SIDL)	0.000	0.957	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.957
X9253 Web Centric Network Warfare (WECAN)	0.000	0.000	5.478	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.478
X9254 Horizontal Integrated Data Environment	0.000	0.000	0.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.989
X9257 Institute for Systems Test and Productivity	0.000	0.000	2.904	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.904
											0.000
Quantity of RDT&E Articles											0

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

**62907 COMNAVRESFOR IT:** 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.

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 Active Duty Special Work (ADSW) recall and Presidential Selective Reserve Call-Up (PSRC) 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.

**69089 Long Distance Learning:** Funding is provided to enhance distance learning technology by developing a more realistic setting for education and training.

**X3054 Navy Web Enabling:** This effort supports programs to move rapidly to a web-enabled environment. Web-enabling the Navy 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. The Navy Web Enabling effort meets Next Generation Network (NGN) requirements both afloat and ashore.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY /BA-5</b>	R-1 ITEM NOMENCLATURE 0605013N Navy Information Technology Dev/Mod	
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p><b>X3042 Defense Software Productivity Initiative (DSPi):</b> This RDT&amp;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 large-scale DoD software projects.</p> <p><b>X9088 SPAWAR ITC Enterprise Management:</b> The SPAWAR Information Technology Center (ITC), New Orleans, will 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><b>X9089 Secure Interactive Distributed Learning (SIDL):</b> 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&amp;D effort will bring to the Navy a secure, cost-effective technology for the more realistic "give and take" experiences in the classroom.</p> <p><b>X9253 Web Centric Network Warfare (WECAN):</b> Congress appropriated funds to provide continued development of Web Centric ASW Net (WECAN). WECAN is a web based software tool for USW/ASW collaborative planning and execution based upon Commercial Off The Shelf (COTS) technologies and products that allows users to discuss immediate and tactical operational concerns such as vulnerability analysis, battle group coordination, and threat discussions.</p> <p><b>X9254 Horizontal Integrated Data Environment (HIDE):</b> Funding is provide to establish an infrastructure framework, content management system that provides engineers an alternative to the current time consuming procedure of producing ship and facility drawings in CAD format. It saves time and money by consolidating engineering data needed to assemble drawings in a central component database. In addition, it provides a Graphical User Interface (GUI) driven, user-friendly method for engineering drawing production, allowing, "drag-and-drop" of components into a virtual workspace. One objective of HIDE is to develop, integrate and deploy a production Ship / Shore Installation Design Tool (SSIDT) in conjunction with a data integration system in FY03. This FY03 Congressional add is to support an emerging need of the Navy to develop an advance design tool for Ship / Shore C4I Installations that was demonstrated in the initial software implementation of a prototype applications.</p> <p><b>X9257 Institute for Systems Test and Productivity:</b> This RDT&amp;E Project is a continuation of activities of the National Institute for Systems Test and Productivity (NISTP) at the University of South Florida to implement recommendations of a Defense Science Board Task Force focused on improving acquisition of software-intensive systems. The goal is to create a research and development environment, in collaboration with industry and government, to evaluate and improve both systems test, productivity tools and techniques to provide meaningful expert support to Navy systems development projects. Section 804 of the Defense Authorization Act of 2003 calls for software best practices to be sought, identified, collected, cataloged and ultimately applied across the armed services. NISTP is working to provide revamped contract incentives for more reliable and predictable software.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b> 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>		

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME 62907 COMNAVRESFOR IT					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	2.531	2.754	3.981	1.319	1.337	0.797	0.770	0.784	0.799	Continuing	Continuing
RDT&E Articles Qty											0

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

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.

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: The New Order Writing (NOW) system will integrate order writing to reduce redundancy and eliminate discrepancies, with the potential for interfaces with systems within the Department of Navy (DoN) and the Department of Defense (DoD). NOW will replace the Reserve Financial Management System (RESFMS), Reserve Integrated Management System (Order Writing Module) (RIMS(OM)), and the Inactive Duty Training Travel (IDTT). The system will interfac with the Defense Travel System (DTS), Reserve Headquarter System (RHS), Reserve Integrated Management System (Financial Management (RIMS(FM)) and Travel Systems. The system will provide SELRES 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.

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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME 62907 COMNAVRESFOR IT
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.754	3.981	1.319	1.337
RDT&E Articles Quantity				

**FY 2002 ACCOMPLISHMENTS:**  
 JALIS: Began development of a Web-enabled application for airlift data collection and analysis system. This system provides on-demand scheduling of operational support aircraft.  
 NOW: Developed and deployed the first iteration (NOW Build A) of the program. IOC deployment was accomplished during FY 02. This iteration replaced the Reserve Financial Management System (RESFMS), Reserve Integrated Management System (Order Writing Module) (RIMS(OM)), and the Inactive Duty Training Travel (IDTT). Accomplished the decentralization of RPN funds down to the Echelon 5 level. Integration, Acceptance and BETA testing was completed and accepted prior to deployment.

**FY 2003 PLANS:**  
 JALIS: Continue development of a Web-enabled application for airlift data collection and analysis system. Development and operational testing will commence.  
 NOW: Develop and deploy the second iteration (NOW Build B) of the program. Program anticipates FOC deployment by the end of FY 03. This iteration will complete decentralization of RPN funds down to the Echelon 6 level. Integration, Acceptance and BETA testing will be completed and accepted prior to deployment.  
 TFMMS: Complete a Business Process Reengineering effort on all functionality. Produce a 100% Peoplesoft Prototype.

**FY 2004 PLANS:**  
 JALIS: Business process re-engineering incorporation into new software development.  
 TFMMS: Start the implementation of the Peoplesoft solution.

**FY 2005 PLANS:**  
 JALIS: Continue software development. Development and operational testing will commence.  
 TFMMS: Continue the implementation of the Peoplesoft solution and complete cutover.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME 62907 COMNAVRESFOR IT			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		2.768	4.070	0.000	0.000
Current BES/President's Budget		2.754	3.981	1.319	1.337
Total Adjustments		-0.014	-0.089	0.000	0.000
Summary of Adjustments					
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.006			
Section 8135: Economic Assumptions		-0.008	-0.023		
Section 8100: Business Process Reform			-0.016		
Section 8109: IT Cost Growth			-0.007		
Miscellaneous Department Adjustments			-0.043		
Subtotal		-0.014	-0.089	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME 62907 COMNAVRESFOR IT
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**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
O&M,N										
JALIS	0.927	0.905	0.664	0.742	0.751	0.762	0.779	0.789	Continuing	Continuing
NOW			1.781	1.544	1.409	1.457	1.704		Continuing	Continuing
TFMMS	1.749	1.603	2.68	1.521	1.931	1.829	2.09	0		

**(U) E. ACQUISITION STRATEGY: \***

Not Applicable.

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

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			62907 COMNAVRESFOR IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development		In-House	0.040								0.040	
Licenses		Various	0.050								0.050	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.090	0.000		0.000		0.000		0.000	0.090	
Remarks:												
Development Support		Various		0.300	10/02						0.300	
Software Development		Various	5.074	3.359	10/02	1.228	10/03	1.241	10/04		10.902	
Integrated Logistics Support		Various		0.065	10/02						0.065	
Configuration Management		Various	0.011								0.011	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			5.085	3.724		1.228		1.241		0.000	11.278	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			62907 COMNAVRESFOR IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various	0.079	0.136	10/02	0.065	10/03	0.069	10/04		0.349	
Operational Test & Evaluation		Various	0.031	0.026	10./02	0.026	10/03	0.027	10/04		0.110	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.110	0.162		0.091		0.096		0.000	0.459	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support		Various		0.039	10/02						0.039	
Program Management Support											0.000	
Travel		Various		0.056	10/02						0.056	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.095		0.000		0.000		0.000	0.095	
Remarks:												
Total Cost			5.285	3.981		1.319		1.337		0.000	11.922	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>												
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>												PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod								PROJECT NUMBER AND NAME 62907 COMNAVRESFOR IT																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>Acquisition Milestones - For NOW</b>																																				
Prototype Phase	X	X	X	X																																
Build A Software Development	X	X	X	X																																
Build B Software Development					X	X	X	X																												
Software 1XXSW Delivery 2XXSW Delivery																																				
<b>Test &amp; Evaluation Milestones</b>																																				
Build A Software Integration Test		X	X	X																																
Operational Test				X																																
<b>Production Milestones</b>																																				
LRIP					X																															
FRP FY 03									X																											
Deliveries				X					X																											

R-1 SHOPPING LIST - Item No. 140 - 18 of 140 - 99

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



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME 69089 Distance Learning IT Center					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>9.535</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>9.535</b>
RDT&E Articles Qty											<b>0</b>
<p>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&amp;D effort will bring to the Navy a secure, cost-effective technology for the more realistic "give and take" experiences in the classroom.</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>											

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME 69089 Distance Learning IT Center

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	9.535	0.000	0.000
RDT&E Articles Quantity				

FY2003 PLANS: Design a robust, secure, cost-effective technology for distance learning.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME 69089 Distance Learning IT Center			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	9.535	0.000	0.000
Total Adjustments		0.000	9.535	0.000	0.000
Summary of Adjustments					
Congress Add Distance Learning IT Center			9.750		
Section 8100: Business Process Reform			-0.039		
Section 8109: IT Cost Growth			-0.018		
Section 8135: Economic Assumptions			-0.055		
Miscellaneous Department Adjustments			-0.103		
Subtotal		0.000	9.535	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod			PROJECT NUMBER AND NAME 69089 Distance Learning IT Center					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
<p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Not Applicable.</p>										
* Not required for Budget Activities 1,2,3, and 6										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			69089 Distance Learning IT Center						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development				1.006							1.006	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering				0.331							0.331	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.337		0.000		0.000		0.000	1.337	
Remarks:												
Development Support											0.000	
Software Development				7.619							7.619	
Integrated Logistics Support											0.000	
Configuration Management				0.064							0.064	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	7.683		0.000		0.000		0.000	7.683	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			69089 Distance Learning IT Center						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation				0.116							0.116	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.116		0.000		0.000		0.000	0.116	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support				0.202							0.202	
Travel				0.197							0.197	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.399		0.000		0.000		0.000	0.399	
Remarks:												
Total Cost			0.000	9.535		0.000		0.000		0.000	9.535	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X3054 Navy Web Enabling					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	6.227	8.629	2.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.889
RDT&E Articles Qty											0

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This effort supports programs to move rapidly to a web-enabled environment. Web-enabling the Navy 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.

**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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X3054 Navy Web Enabling

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	8.629	2.033	0.000	0.000
RDT&E Articles Quantity				

**FY2002 ACCOMPLISHMENTS:**

Designed, developed, and tested prototype web front end for unit level NTCSS applications. DT/OT commences. Design and develop Web-enabling infrastructure.

**FY2003 PLANS:**

Design, develop, and test web front end for force level NTCSS applications. Continue development and testing of Web-enabling infrastructure.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0605013N Navy Information Technology Dev/Mod	X3054 Navy Web Enabling			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		7.040	2.207	0.000	0.000
Current BES/President's Budget		8.629	2.033	0.000	0.000
Total Adjustments		1.589	-0.174	0.000	0.000
Summary of Adjustments					
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.011			
Section 8100: Business Process Reform			-0.008		
Section 8135: Economic Assumptions		-0.019	-0.030		
Section 8109: IT Cost Growth			-0.004		
FY03 FFRDC reduction Sec. 8029, P.L. 107-248			-0.110		
Miscellaneous Navy Adjustments		1.619			
Miscellaneous Department Adjustments			-0.022		
Subtotal		1.589	-0.174	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					





# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X3054 Navy Web Enabling						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development		Various	0.500								0.500	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering		Various	4.832	0.222	10/02						5.054	
Training Development											0.000	
Licenses		Various	1.500	0.300	10/02						1.800	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			6.832	0.522		0.000		0.000		0.000	7.354	
Remarks:												
Development Support											0.000	
Software Development		Various	6.742	0.804	10/02						7.546	
Integrated Logistics Support											0.000	
Configuration Management		Various		0.150	10/02						0.150	
Technical Data		Various	0.250	0.150	01/00						0.400	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			6.992	1.104		0.000		0.000		0.000	8.096	
Remarks:												

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X3054 Navy Web Enabling						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various	0.610	0.100	10/02						0.710	
Operational Test & Evaluation		Various	0.172	0.200	10/02						0.372	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.782	0.300		0.000		0.000		0.000	1.082	
Remarks:												
Contractor Engineering Support		Various	0.250	0.107	10/02						0.357	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.250	0.107		0.000		0.000		0.000	0.357	
Remarks:												
Total Cost			14.856	2.033		0.000		0.000		0.000	16.889	
Remarks:												





# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X3042 Defense Software Productivity Initiative (DSPI)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	3.092	2.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.770
RDT&E Articles Qty											0
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:            This RDT&amp;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 large-scale DoD software projects.</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>											

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X3042 Defense Software Productivity Initiative (DSPi)
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.678	0.000	0.000	0.000
RDT&E Articles Quantity				

**FY02 ACCOMPLISHMENTS:**  
 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. Initiated and provided program support and transition approaches to DoD large scale software development and test programs. Established Research Coordinating Council (RCC). Established Systems Test and Productivity Council (STP). Produced summaries of methods, techniques, and practices, conducted industry/academia/military conference and revised web site.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X3042 Defense Software Productivity Initiative (DSPI)
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**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	2.678	0.000	0.000	0.000
Total Adjustments	2.678	0.000	0.000	0.000

Summary of Adjustments

Congressional Add DSPI	2.800
Sec. 313, PL 107-206: Revised Economic Assumptions	-0.006
Section 8135: Economic Assumptions	-0.007
Section 8123: Management Reform Initiative	-0.025
SBIR Assessment	-0.072
Miscellaneous Navy Adjustments	-0.012
Subtotal	2.678

(U) Schedule:  
Not Applicable.

(U) Technical:  
Not Applicable.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod			PROJECT NUMBER AND NAME X3042 Defense Software Productivity Initiative (DSPi)																										
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td colspan="11" style="padding: 10px;">Not Applicable.</td> </tr> </tbody> </table>  <p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p style="padding-left: 20px;">Not Applicable.</p>										<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	Not Applicable.										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																					
Not Applicable.																															
<p>* Not required for Budget Activities 1,2,3, and 6</p>																															



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X3042 Defense Software Productivity Initiative (DSPI)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												0.000
Ancillary Hardware Development												0.000
Aircraft Integration												0.000
Ship Integration												0.000
Ship Suitability												0.000
Systems Engineering	C/Cost	U. of So FI	5.284									5.284
	PO	Various	0.486									0.486
Training Development												0.000
Licenses												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal Product Development			5.770	0.000		0.000		0.000		0.000		5.770
Remarks:												
Development Support												0.000
Software Development												0.000
Integrated Logistics Support												0.000
Configuration Management												0.000
Technical Data												0.000
Studies & Analyses												0.000
GFE												0.000
Award Fees												0.000
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X3042 Defense Software Productivity Initiative (DSPI)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			5.770	0.000		0.000		0.000		0.000	5.770	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X9088 SPAWAR ITC Enterprise Management					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		4.332	5.867	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.199
RDT&E Articles Qty											0
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Space and Naval Warfare (SPAWAR), Information Technology Center (ITC), New Orleans is the primary Information Technology (IT) support command for all Navy and Naval Reserve manpower and personnel functions and for the Program Executive Office for Information Technology (PEO-IT). In this role, the SPAWAR ITC provides effective enterprise-wide integrated information management/information technology (IM/IT) solutions related to system integration, development, testing and evaluation.</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>											

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9088 SPAWAR ITC Enterprise Management
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.332	5.867	0.000	0.000
RDT&E Articles Quantity				

**FY2002 ACCOMPLISHMENTS:**

- Developed multiple enterprise integration solutions for manpower and personnel programs.

**FY2003 Plans:**

- Continue to develop enterprise integration and migration solutions for manpower and personnel programs.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9088 SPAWAR ITC Enterprise Management

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	4.332	5.867	0.000	
Total Adjustments	4.332	5.867	0.000	0.000

Summary of Adjustments

Congressional Add SPAWAR ITC Enterprise Mgt.	4.500	6.000		
Section 8123: Management Reform Initiative	-0.040			
Sec. 313, PL 107-206: Revised Economic Assumptions	-0.010			
Section 8100: Business Process Reform		-0.024		
Section 8135: Economic Assumptions	-0.012	-0.034		
Section 8109: IT Cost Growth		-0.011		
SBIR Assessment	-0.116			
Miscellaneous Navy Adjustments	0.010			
Miscellaneous Department Adjustments		-0.064		
Subtotal	4.332	5.867		

(U) Schedule:

Not Applicable.

(U) Technical:

Not Applicable.



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9088 SPAWAR ITC Enterprise Management						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											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	CPFF	GSA	4.332	5.867							10.199	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			4.332	5.867		0.000		0.000		0.000	10.199	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9088 SPAWAR ITC Enterprise Management						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			4.332	5.867		0.000		0.000		0.000	10.199	
Remarks:												



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X9089 Secure Interactive Distributed Learning (SIDL)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		0.957	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.957
RDT&E Articles Qty											0
<p>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&amp;D effort will bring to the Navy a secure, cost-effective technology for the more realistic "give and take" experiences in the classroom.</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>											

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9089 Secure Interactive Distributed Learning (SIDL)

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.957	0.000	0.000	0.000
RDT&E Articles Quantity				

**FY 2002 ACCOMPLISHMENTS:**

- Developed and designed a more robust, secure, cost-effective technology for distance learning.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9089 Secure Interactive Distributed Learning (SIDL)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.957	0.000	0.000	0.000
Total Adjustments		0.957	0.000	0.000	0.000
Summary of Adjustments					
Congressional Add SIDL		1.000			
Section 8123: Management Reform Initiative		-0.009			
SBIR Assessment		-0.025			
Sec. 313, PL 107-206: Revised Economic Assumptions		-0.002			
Section 8135: Economic Assumptions		-0.003			
Miscellaneous Navy Adjustments		-0.004			
Subtotal		0.957			
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																							
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605013N Navy Information Technology Dev/Mod			<b>PROJECT NUMBER AND NAME</b> X9089 Secure Interactive Distributed Learning (SIDL)																								
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td colspan="10" style="padding: 20px 0 0 0;"> <p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Not Applicable.</p> </td> </tr> </tbody> </table>										<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	<p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Not Applicable.</p>									
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																				
<p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>Not Applicable.</p>																														
<p>* Not required for Budget Activities 1,2,3, and 6</p>																														

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9089 Secure Interactive Distributed Learning (SIDL)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											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											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses			0.957								0.957	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.957	0.000		0.000		0.000		0.000	0.957	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9089 Secure Interactive Distributed Learning (SIDL)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.957	0.000		0.000		0.000		0.000	0.957	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification									DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X9253 WEB Centric Network Warfare					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost		0.000	5.478	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.478
RDT&E Articles Qty											0
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:  Congress appropriated funds to provide continued development of Web Centric ASW Net (WECAN). WECAN is a web based software tool for USW/ASW collaborative planning and execution based upon Commercial Off The Shelf (COTS) technologies and products that allows users to discuss immediate and tactical operational concerns such as vulnerability analysis, battle group coordination, and threat discussions.</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>											

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9253 WEB Centric Network Warfare

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	5.478	0.000	0.000
RDT&E Articles Quantity				

**FY2003 PLANS:**

CONGRESSIONAL PLUS-UP – Expand capability of WEB Centric ASW Network (WECAN) collaborative planning functionality to include other multi-mission warfare areas. Provide WECAN functionality to new ASW platforms. Funding will provide continued program support and the migration of existing capabilities to the Navy Common Collaborative Tool Set and integration with other warfare areas and domains.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0605013N Navy Information Technology Dev/Mod	X9253 WEB Centric Network Warfare			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	5.478	0.000	0.000
Total Adjustments		0.000	5.478	0.000	0.000
Summary of Adjustments					
Congressional Add WECAN			5.600		
SEC 8100: Business Process Reform			-0.022		
SEC. 8135: Economic Assumptions			-0.031		
SEC. 8109: IT Cost Growth			-0.010		
Miscellaneous Department Adjustments			-0.059		
Subtotal		0.000	5.478	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 140 - 54 of 140 - 99

# UNCLASSIFIED



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9253 WEB Centric Network Warfare						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WeCAN	CPIF	ORINCON/Various		5.478							5.478	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	5.478		0.000		0.000		0.000	5.478	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9253 WEB Centric Network Warfare						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	5.478		0.000		0.000		0.000	5.478	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod				PROJECT NUMBER AND NAME X9254 Horizontal Integrated Data Environment (HIDE)					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>0.989</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											<b>0</b>

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

HIDE will play a significant role in achieving high efficiency of all stages of system support and installation fielding. Process automation will be achieved by leveraging these technologies.

(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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9254 Horizontal Integrated Data Environment (HIDE)
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**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.989	0.000	0.000
RDT&E Articles Quantity				

FY2003 PLANS:  
- The total HIDE software development and testing will be performed during FY03.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9254 Horizontal Integrated Data Environment (HIDE)			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		0.000	0.000	0.000	0.000
Current BES/President's Budget		0.000	0.989	0.000	0.000
Total Adjustments		0.000	0.989	0.000	0.000
Summary of Adjustments					
Congressional Add HIDE		0.000	1.000		
Miscellaneous Department Adjustments			-0.011		
Subtotal		0.000	0.989	0.000	0.000
(U) Schedule:					
Not Applicable.					
(U) Technical:					
Not Applicable.					

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod			PROJECT NUMBER AND NAME X9254 Horizontal Integrated Data Environment (HIDE)					
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable.										
<b>(U) E. ACQUISITION STRATEGY: *</b>										
Not Applicable.										
* Not required for Budget Activities 1,2,3, and 6										



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9254 Horizontal Integrated Data Environment (HIDE)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development		In-House	0.000	0.000							0.000	
Licenses		Various	0.000	0.167	01/03						0.167	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.167		0.000		0.000		0.000	0.167	
Remarks: The software application requires Documentum enterprise licenses \$167K												
Development Support		Various	0.000							0.000	0.000	
Software Development		Various	0.000	0.822	03/03	0.000		0.000			0.822	
Integrated Logistics Support		Various									0.000	
Configuration Management		Various	0.000								0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.822		0.000		0.000		0.000	0.822	
Remarks: The total software development and testing will be performed during FY03												

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9254 Horizontal Integrated Data Environment (HIDE)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various	0.000	0.000		0.000		0.000			0.000	
Operational Test & Evaluation		Various	0.000	0.000		0.000		0.000			0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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		Various		0.000							0.000	
Program Management Support											0.000	
Travel		Various		0.000							0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.989		0.000		0.000		0.000	0.989	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NAME AND NUMBER 0605013N Navy Information Technology Dev/Mod			PROJECT NAME AND NUMBER X9257 Institute for Systems Test and Productivity					
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Cost
Project Cost	<b>0.000</b>	<b>2.904</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>2.904</b>
RDT&E Articles Qty										
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:            This RDT&amp;E Project is a continuation of activities of the National Institute for Systems Test and Productivity (NISTP) at the University of South Florida to implement recommendations of a Defense Science Board Task Force focused on improving acquisition of software-intensive systems. The goal is to create a research and development environment, in collaboration with industry and government, to evaluate and improve both systems test, productivity tools and techniques to provide meaningful expert support to Navy systems development projects. Section 804 of the Defense Authorization Act of 2003 calls for software best practices to be sought, identified, collected, cataloged and ultimately applied across the armed services. NISTP is working to provide revamped contract incentives for more reliable and predictable software.</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>										

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME X9257 Institute for Systems Test and Productivity

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	2.904	0.000	0.000
RDT&E Articles Quantity				

FY 2003 PLAN:

Development of End-to-End test tools and techniques for large-scale distributed systems based upon practical lessons learned from the Y2K effort in the Department of Defense including time critical evaluation support to the series of Navy FORCENet Limited Objective Experiments and FORCENet Sea Trials (These techniques will grow to become a forerunner in developing applied evaluation techniques for Grid Automation) ; development and production of a working prototype software test capability to be used for a Navy Collaborative Engineering Environment (and subsequently for all of DoD) that utilizes combinations of computational intelligence tools and techniques to predict and optimize the number of test cases that should result in significant reductions in both cycle time and costs associated with testing Navy and other defense software (Applied theorem proving behavior for Navy Network Centric Warfare scenario design activities is a current focus for the tool.); delivering modular Software Test and Systems Engineering courses for DoN and other Defense Department use; development of a collection of relevant Harvard Business School style Case Studies; cross disciplinary initiatives to define metrics aimed at extending the engineering concept of Quality of Service (QOS) to a broader concept of Quality of Information (QOI) which takes both the context and meaning of content into consideration as serious metrics; and a state-of-the-art systems testing laboratory facilities and a test correlation database.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0605013N Navy Information Technology Dev/Mod	X9257 Institute for Systems Test and Productivity

**(U) C. PROGRAM CHANGE SUMMARY:**

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	0.000	0.000	0.000	0.000
Current BES/President's Budget	0.000	2.904	0.000	0.000
Total Adjustments	0.000	2.904	0.000	0.000

Summary of Adjustments

Section 8100: Business Process Reform	-0.012
Section 8135: Economic Assumptions	-0.023
Section 8109: IT Cost Growth	-0.005
Institute for Systems Test & Productivity	2.975
Miscellaneous Department Adjustments	-0.031

Subtotal	0.000	2.904
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(U) Schedule:  
Not Applicable.

(U) Technical:  
Not Applicable.



# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod				X9257 Institute for Systems Test and Productivity					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	C/Cost	U. of So FI		2.300							2.300	
	PO	Various		0.604							0.604	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	2.904		0.000		0.000		0.000	2.904	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N Navy Information Technology Dev/Mod			X9257 Institute for Systems Test and Productivity						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	2.904		0.000		0.000		0.000	2.904	
Remarks:												



EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY</b>					R-1 ITEM NOMENCLATURE Navy Info Tech Dev/Mod 0605013N			
					<b>BA-5</b>			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	7.597	11.018	7.316	4.187	4.051	4.083	4.160	4.238
NAVSEA IT S2904	5.067	4.611	4.316	4.187	4.051	4.083	4.160	4.238
Total Fleet Support S9090	2.530	2.494	0.000	0.000	0.000	0.000	0.000	0.000
Navy Predictive Response Center S9258	0.000	3.325	0.000	0.000	0.000	0.000	0.000	0.000
CBM Enabling Technologies - S9259	0.000	0.588	3.000	0.000	0.000	0.000	0.000	0.000

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

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. Task Force Web (TFW) is responsible for the development of the infrastructure needed for the Web Enabled Navy. The Web Enabled Navy is currently researching, developing and implementing a overall plan to take advantage of web technologies to create integrated and transformational information exchange for the Navy. The goal is to better enhance the Navy's capability to perform combat/mission support in a fully mobile, joint environment for both deployable and non-deployable units. Through Web enabling technologies, Navy personnel will have the ability to tailor the information flow and information access to meet their requirements.

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.

Total Fleet Support System S9090 - 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.

Navy Predictive Response Center S9258 - The Predictive Response Center project is a Navy initiative designed to improve fleet support processes by reducing fleet workload and improving the shore support infrastructure. Current methods of providing distance support are inefficient and quite complex. To address this, the Navy has established an Integrated Call Center (ICC) to receive all support requests from the fleet and to manage the requests by working with the appropriate support provided. In addition, the Navy established an Anchor desk to coordinate all distance support efforts and feed them into the ICC. Distance Support efforts consist of maintenance, training, administrative, technical and supply initiatives aimed at reducing workload for Navy personnel.

CBM Enabling Technologies S9259 - This project's goal is to identify and deploy cost-saving ship maintenance enabling technologies supporting the Navy's CBM strategy. CBM implementation is a significant enabler of Department of the Navy's (DoN) affordability objectives. CBM is the core component of "CBM Plus", one of six initiatives included in the DUSD (L&MR) Future Logistics Enterprise "The Way Ahead" dated 3 June 02. This project will analyze, demonstrate and assess CBM-enabling technologies for both next-generation ships (e.g., DD(X) and CVNX) as well as for back-fit in legacy ship classes.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME NAVY INFO TECH DEV/MOD PE: 0605013N			PROJECT NUMBER AND NAME NAVSEA IT DEV/MOD PROJECT S2904/S9090			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
NAVSEA IT S2904	5.067	4.611	4.316	4.187	4.051	4.083	4.160	4.238
RDT&E Articles Qty								

**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 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). The Task Force Web (TFW) is responsible for the development of the infrastructure needed for the Web Enabled Navy. The Web Enabled Navy is currently researching, developing and implementing a overall plan to web technologies to create integrated and transformational information exchange for the Navy. The goal is to better enhance the Navy's capability to perform combat/mission support in a fully mobile, joint environment for both deployable and non-deployable units. Through Web enabling technologies, Navy personnel will have the ability to tailor the information flow and information access to meet their requirements. 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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME NAVY INFO TECH DEV/MOD PE: 0605013N	PROJECT NUMBER AND NAME NAVSEA IT DEV/MOD PROJECT S2904

**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.253	1.093	1.043	1.001
RDT&E Articles Quantity				

Miscellaneous Technical Support - Infrastructure Enhancement

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.109	0.105	0.104	0.090
RDT&E Articles Quantity				

Integration Class Maintenance Plans (ICMP)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.242	0.211	0.201	0.193
RDT&E Articles Quantity				

Ships Configuration Logistics Support Information Systems (SCLISIS)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME NAVY INFO TECH DEV/MOD PE: 0605013N	PROJECT NUMBER AND NAME NAVSEA IT DEV/MOD PROJECT S2904/S9090

**B. Accomplishments/Planned Program (Cont.)**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.360	0.967	0.893
RDT&E Articles Quantity				

Command Document Management Systems (CDMS)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	1.416	1.601	1.660
RDT&E Articles Quantity				

Task Force Web

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	3.463	0.426	0.400	0.350
RDT&E Articles Quantity				

Various Software Development/Upgrades and Fleet Support System (in FY02 only). Includes S9090 for Total Fleet Support Congressional Add of 2.542K.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME NAVY INFO TECH DEV/MOD PE: 0605013N	PROJECT NUMBER AND NAME NAVSEA IT DEV/MOD PROJECT S2904/S9090			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		7.944	4.719	4.415	4.277
Current BES/President's Budget (FY04/05 OSD/OMB Controls)		7.597	11.018	7.316	4.187
Total Adjustments		-0.347	6.299	2.901	-0.090
Summary of Adjustments					
Congressional program reductions		0.000	0.000	0.000	0.000
Congressional undistributed reductions		0.000	-0.004	0.000	0.000
Congressional rescissions		0.000	0.031	0.000	0.000
SBIR/STTR Transfer		-0.402	0.000	0.000	0.000
Economic Assumptions		0.000	-0.043	0.000	0.000
Mgmt Reform		-0.023	0.000	0.000	0.000
Reprogrammings		0.000	0.000	3.000	0.000
Purchase Inflation Savings		0.000	0.588	-0.076	0.000
Inflation Savings		0.000	-0.113	-0.023	-0.090
Business Process Re-engineering		0.000	-0.031	0.000	0.000
IT Cost Growth		0.000	-0.015	0.000	0.000
Misc Adjustments		0.078	0.067	0.000	0.000
Congressional increases		0.000	5.819	0.000	0.000
Subtotal		-0.347	6.299	2.901	-0.090
Schedule:					
Not Applicable					
Technical:					
Not Applicable					

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME NAVY INFO TECH DEV/MOD 0605013N			PROJECT NUMBER AND NAME NAVSEA IT DEV/MOD S2904/S9090					
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u> N/A	<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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
 <b>E. ACQUISITION STRATEGY: *</b>  N/A										
 <b>F. MAJOR PERFORMERS: **</b>  N/A										
<p>* Not required for Budget Activities 1,2,3, and 6                  ** Required for DON and OSD submit only.</p>										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			NAVY INFO TECH DEV/MOD 0605013N			NAVSEA IT DEV/MOD S2904/S9090						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0.190	0.187		0.187		0.175		Continuing	Continuing	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.190	0.190		0.187		0.175		0.000	0.742	
<p>Remarks:</p> <p>"Various" is being used in the Contract Method &amp; Type, plus Performing Activity &amp; Location, because of numerous project initiations and implementations.</p>												
Development Support											0.000	
Software Development	Various	Various	1.897	0.582		0.579		0.550		Continuing	Continuing	
Training Development											0.000	
Integrated Logistics Support			1.093								1.093	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			2.990	0.582		0.579		0.550		0.000	4.701	
<p>Remarks:</p>												

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			NAVY INFO TECH DEV/MOD 0605013N			NAVSEA IT DEV/MOD S2904/S9090						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.234	1.234		1.207		1.200		Continuing	Continuing	
Operational Test & Evaluation			0.100	0.100		0.100		0.075		Continuing	Continuing	
Live Fire Test & Evaluation												0.000
Test Assets												0.000
Tooling												0.000
GFE												0.000
Award Fees												0.000
Subtotal T&E			1.334	1.334		1.307		1.275		0.000	5.250	
Remarks:												
Contractor Engineering Support	C/FP	Various	1.569	1.389		1.135		1.112		Continuing	Continuing	
Government Engineering Support												0.000
Program Management Support	C/FP	Various	1.436	1.116		1.108		1.075		Continuing	Continuing	
Travel												0.000
Labor (Research Personnel)												0.000
SBIR Assessment												0.000
Subtotal Management			3.005	2.505		2.243		2.187		0.000	9.940	
Remarks:												
Total Cost			7.519	4.611		4.316		4.187		0.000	20.633	
Remarks:												



# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N - CBM Enabling Technologies			PROJECT NUMBER AND NAME S9259 - CBM Enabling Technologies			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>0.000</b>	<b>0.588</b>	<b>3.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project's goal is to identify and deploy cost-saving ship maintenance enabling technologies which will be a significant enabler of Department of the Navy's (DoN) affordability objectives. This project will analyze, demonstrate and assess enabling technologies for both next-generation ships (e.g., DD(X) and CVNX) as well as for back-fit in legacy ship classes.

CLASSIFICATION:

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N - CBM Enabling Technologies	PROJECT NUMBER AND NAME S9259 - CBM Enabling Technologies
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.588	3.000	0.000
RDT&E Articles Quantity				

.FY 2003 Plan:

- (U) (\$300k) for research on Bearing Remaining Useful Life prognostics.
- (U) (\$207k) for research on Variable Speed Drive mechanisms for shipboard machinery to avoid significant maintenance problems and high energy consumption and
- (U) (\$81k) for research into maintenance-free lube and fuel oil strainers for shipboard systems.

FY 2004 Plan:

- (U) \$150k to develop machinery space diagnostics and prognostics to enable machinery space equipment CBM;
- (U) \$200k to research the development of triggers for machinery parameters to convert current maintenance to CBM;
- (U) \$500k to perform proof of concept testing after triggers have been determined;
- (U) \$350k to research, test and prototype power haversing, wireless sensor in support of advanced machinery space diagnostics and prgnostics;
- (U) \$800k for final testing and evaluation of Smart Bearing Remaining useful life on multiple machinery types;
- (U) \$350k for hardware purchase for sensors for the Smart Bearing testing and the test plan; and
- (U) \$650k to prototye and support advanced shipboard electronic handheld logkeeping which will enable necessary data collection in support of CBM diagnostics

**UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>FEBRUARY 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N - CBM Enabling Technologies	PROJECT NUMBER AND NAME S9259 - CBM Enabling Technologies
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**C. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	0.00	0.000	0.000	0.000
Current BES/President's Budget: (FY04/05 OSD/OMB Controls)	0.00	0.588	3.000	0.000
Total Adjustments	0.00	0.588	3.000	0.000

Summary of Adjustments

PDB-605	0.000	0.588	3.000	0.000
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Subtotal	0.000	0.588	3.000	0.000
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Schedule:  
Not applicable

Technical:  
Not applicable

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605013N - CBM Enabling Technologies			<b>PROJECT NUMBER AND NAME</b> S9259 - CBM Enabling Technologies				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY: *</b>										
Not Applicable										
<b>F. MAJOR PERFORMERS: **</b>										
Not Applicable										
<p>* Not required for Budget Activities 1,2,3, and 6                  ** Required for DON and OSD submit only.</p>										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N; CBM Enabling Technologies			Project Unit (PU) No. S9259, CBM Enabling Technologies						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWCCD-SSES									0.000	
Ancillary Hardware Development											0.000	
Component Development	CPFF	AMS - Fairfax				0.150					0.150	
Ship Integration	CPFF	Filtrex		0.081							0.081	
Ship Suitability	CPFF	MagnaDrive		0.207							0.207	
Systems Engineering	CPFF	RLW, Inc		0.300							0.300	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE	CPFF	Vendors				0.300					0.300	
Award Fees											0.000	
Subtotal Product Development			0.000	0.588		0.450		0.000		0.000	1.038	
Remarks:												
Development Support	WR	NSWCCD-SSES									0.000	
Software Development	CPFF	RLW - State College				0.500					0.500	
Training Development											0.000	
Integrated Logistics Support	CPFF	AMS - Fairfax				0.350					0.350	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.850		0.000		0.000	0.850	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>FEBRUARY 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RD&amp;E, N / BA-5</b>			Program Element 0605013N; CBM Enabling Technologies			Project Unit (PU) No. S9259, CBM Enabling Technologies						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWCCD-SSES				0.300					0.300	
Operational Test & Evaluation	WR	NSWCCD-SSES				0.300					0.300	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling	CPFF	RLW				0.200					0.200	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.800		0.000		0.000	0.800	
Remarks:												
Contractor Engineering Support	CPFF	AMS - Fairfax				0.600					0.600	
Government Engineering Support	WR	NSWCCD-Daihgren/SSES				0.300					0.300	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.900		0.000		0.000	0.900	
Remarks:												
Total Cost			0.000	0.588		3.000		0.000		0.000	3.588	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy IT Dev/Mod			PROJECT NUMBER AND NAME W2903 - NAVAIR IT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>3.869</b>	<b>2.423</b>	<b>2.292</b>	<b>2.304</b>	<b>2.335</b>	<b>2.396</b>	<b>2.441</b>	<b>2.487</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

The Configuration Management Information System (CMIS) Program is DoD's standard software system for complete and integrated configuration management (CM) of weapon systems from acquisition to disposal. CMIS efficiently manages all product structure data, including complex interrelationship between assemblies and subassemblies, technical documentation and the parts that comprise the item. CMIS is designed to manage and control configuration data to support the DoD business processes. Accurate, complete and accessible configuration data is critical to the successful operations of DoD weapon systems or tracked assets. Mission readiness, and operational capabilities are enhanced by CMIS, as instant consistent integrated configuration data is readily available to operators, maintainers and logistics personnel. This system is a CM tool available DoD wide to support all potential customers. 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.

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.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy IT Dev/Mod	PROJECT NUMBER AND NAME W2903 - NAVAIR IT

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	2.628	2.354	2.292	2.304
RDT&E Articles Quantity				

Re-baseline CMIS Software to upgrade to latest version of Oracle, incorporate development efforts associated with COTS obsolescence, and evolve an open standard interface to other systems.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	1.241	0.069	0.000	0.000
RDT&E Articles Quantity				

Migration and testing of 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.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				



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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0605013N - Navy IT Dev/Mod	W2903 - NAVAIR IT			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY03 President's Budget		4.074	2.478	2.351	2.360
FY04 President's Budget Submit		3.869	2.423	2.292	2.304
Total Adjustments		-0.205	-0.055	-0.059	-0.056
Summary of Adjustments					
Congressional program reductions			-0.015		
Congressional undistributed reductions					
Congressional rescissions		0.027			
SBIR/STTR Transfer		-0.107			
Economic Assumptions		-0.010	-0.040	-0.057	-0.054
Reprogrammings		-0.115			
Other Navy/OSD Adjustments				-0.002	-0.002
Congressional increases					
Subtotal		-0.205	-0.055	-0.059	-0.056
(U) Schedule:					
(U) Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 140 - 86 of 140 - 99

# UNCLASSIFIED

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																								
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605013N - Navy IT Dev/Mod			<b>PROJECT NUMBER AND NAME</b> W2903 - NAVAIR IT																									
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. &amp; Name</th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: center; border-bottom: 1px solid black;"><u>FY 2009</u></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 colspan="11" style="padding: 10px;">Not Applicable.</td> </tr> </tbody> </table>  <p><b>(U) E. ACQUISITION STRATEGY:</b>            The CMIS Program used Joint Logistics Systems Center (JLSC) funds to evolve CMIS to Software Release 5.0. At this point, in June 1998 CMIS was transferred to the Navy as executive agent and NAVAIR as program manager. Program Budget Decision 401 transferred joint funding from JLSC to NAVAIR to continue evolving CMIS. The CMIS Program Manager continues to evolve the program to keep pace with cost, Military Standards, and evolving commercial standards. Various contractors using competitively awarded contracts have supported the program. Currently, Intergraph Corporation is the CMIS integration contractor selected through a competitively awarded IDIQ contract.</p>  <p><b>(U) F. MAJOR PERFORMERS:</b></p>										Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost	Not Applicable.										
Line Item No. & Name	<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>FY 2008</u>	<u>FY 2009</u>	To Complete	Total Cost																					
Not Applicable.																															

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N - Navy IT Dev/Mod			W2903 - NAVAIR IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Software Development (NALDA)	C/CPAF		2.303								2.303	2.303
Award Fee (6%) (NALDA)	C/CPAF		0.147								0.147	
Software Development (CMIS)	C/CPAF		0.415								0.415	0.415
Award Fee (6%) (CMIS)	C/CPAF		0.024								0.024	
Software Development (CMIS)	MIPR		0.155								0.155	
Software Development (CMIS)	WX		0.050								0.050	
Software Development (NALDA)	C/ID/IQ			0.069	11/02						0.069	0.069
Software Development (CMIS)	C/ID/IQ	Intergraph, Huntsville AL	1.633	1.805	11/02	1.724	11/03	1.696	11/04	Continuing	Continuing	
Subtotal Support			4.727	1.874		1.724		1.696		Continuing	Continuing	
Remarks: Funding will be used for rehosting and testing of COTS upgrades to ensure objective performance of the CMIS system is achieved and testing of system migration from legacy configuration management systems into DoD CMIS.												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605013N - Navy IT Dev/Mod			W2903 - NAVAIR IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Program Mgmt Support (NALDA)	WX		0.017								0.017	
Program Mgmt Support (CMIS)	WX		0.592	0.549	11/02	0.568	11/03	0.608	11/04	Continuing	Continuing	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.609	0.549		0.568		0.608		Continuing	Continuing	
Remarks:												
Total Cost			5.336	2.423		2.292		2.304		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5      Engineering &amp; Manufacturing</b>					R-1 ITEM NOMENCLATURE 0605013N Navy IT DEV / MOD			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE0605013N Cost	13.578	14.780	7.624	7.782	0.000	0.000	0.000	0.000
E-Business	13.578	14.780	7.624	7.782	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	<b>Not Applicable</b>							
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> 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.</p>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT DEV / MOD				PROJECT NUMBER AND NAME T3038 E-Business			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>13.578</b>	<b>14.780</b>	<b>7.624</b>	<b>7.782</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b></p> <p>The R&amp;D funding provided is specifically for the execution of proof of concept type initiatives. This Office is the enabler for the Department of Navy to be in alignment with the President's Management Agenda and effectively meet the transformation challenge. Several of the pilots executed in FY01 directly related to the eGovernment strategies OMB is currently focusing on. Those pilot solutions of interest were provided to OMB for potential exportability to Other Federal Agencies. Of particular interest was a solution focused on e authentication, another focused on management of geospatial products. In FY02 the Pilot Management Group is executing a DOD/VA Integration project addressing seamless sharing of key medical information once personnel transition from active duty to retirement.</p>								

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT DEV / MOD	PROJECT NUMBER AND NAME T3038 E-Business
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	13.578			
RDT&E Articles Quantity				

Execute between 30 and 50 pilot projects. Pilot project execution consists principally of proof of concept approach.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		14.780		
RDT&E Articles Quantity				

Continue the effort of identifying opportunities within DoN to implement new eBusiness solutions and facilitate the integration of these initiatives across the Department.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			7.624	
RDT&E Articles Quantity				

With an average project costing between \$500k-\$800k the anticipated number of projects is 10-15.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: February 2003
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT DEV / MOD	PROJECT NUMBER AND NAME T3038 E-Business
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**B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				7.782
RDT&E Articles Quantity				

With an average project costing between \$500k-\$800k the anticipated number of projects is 10-15

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				



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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT DEV / MOD	PROJECT NUMBER AND NAME T3038 E-Business			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		14.867	15.113	0.000	0.000
Current BES/President's Budget:		13.578	14.780	7.624	7.782
Total Adjustments		-1.289	-0.333	7.624	7.782
Summary of Adjustments					
Congressional program reductions					
Congressional undistributed reductions					
Congressional rescissions		-0.825	0.333	-0.176	-0.168
SBIR/STTR Transfer					
Economic Assumptions		-0.139			
Reprogrammings		-0.325		7.800	7.950
Congressional increases					
Subtotal		-1.289	-0.333	7.624	7.782
Schedule:					
Technical:					

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME 0605013N Navy IT DEV / MOD			PROJECT NUMBER AND NAME T3038 E-Business				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u>	Total <u>Cost</u>
Not Applicable										
<b>E. ACQUISITION STRATEGY: *</b>										
The milestone for FYs 02-FYs 05 is the proof of concept initiatives for the benefit of the Department of Navy.										

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0605013N Navy IT Dev / Mod				PROJECT NUMBER AND NAME T3038 E-Business							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	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	0.000	
Remarks:														

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0605013N Navy IT Dev / Mod				PROJECT NUMBER AND NAME T3038 E-Business							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various		\$13.578	Various	\$14.780	TBD	\$7.624	TBD	\$7.782	TBD		\$35.982	
Operational Test & Evaluation													\$0.000	
Tooling													\$0.000	
GFE													\$0.000	
Subtotal T&E			0.000	13.578		\$14.780		\$7.624		\$7.782			\$35.982	
<p>Remarks: The funding provided is for purposes of executing proof of concept projects by the DON eBusiness Operations Office, Pilot Management Group. The pilot submission process is ongoing with application for submission available to all DON personnel via the DON eBusiness Operations Office website. Pilots are rated and ranked on an incremental basis throughout a given fiscal year. The FY02 funding provided the resources necessary to execute 19 projects. The technologies pursued are as varied as the organizations including web based, scaleable metrics displays, employing COTS used by commercial airlines to collect key flight data recorder information, testing use of multi media technology to provide job aids. A similar approach is planned FY03 and out. However, due to the nature of the program, the rapid prototyping, proof of concept approach the specific projects which will be executed are not known at this time. This pilot corpus is the means by which the Department of Navy executes</p>														
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	0.000	0.000
Remarks:														
Total Cost			\$0.000	\$13.578		\$14.780		\$7.624		\$7.782		\$0.000	\$35.982	
Remarks:														



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**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0605013N Navy IT Dev / Mod				T3038 E-Business			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	2Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
System Design Review (SDR)								
Milestone II (MSII)								
Contract Preparation								
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
Developmental Testing (DT-IIA)								
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initial Production II Delivery								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 140 - 99 of 140 - 99

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE 0605014N Information Technology Development					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	0.000	44.410	50.115	78.724	49.552	19.631	0.000	0.000	0.000	Continuing	Continuing
DIMHRS 63033	0.000	44.410	50.115	78.724	49.552	19.631	0.000	0.000	0.000	Continuing	Continuing
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>											
<p>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.</p>											
<b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>											
<p>This program is funded under SYSTEMS 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. 141

# UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification  
(Exhibit R-2, page 1 of 9)

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605014N Information Technology Development	PROJECT NUMBER AND NAME DIMHRS 63033

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	44.410	50.115	78.724	49.552
RDT&E Articles Quantity	1	1		

1. (U) FY 2002 ACCOMPLISHMENTS: (44,410)
- Prototyped live GCCS interface capability during Joint Warfighter Exercise. Completed the Targeted Analysis (Fit/Gap) on PeopleSoft North American and PeopleSoft Global.
  - Initiated the Target Analysis (Fit/Gap) for the remaining PeopleSoft areas required for the DIMHRS (Pers/Pay) Program.
  - Exercised Option 1 of the two-year COTS Human Resources enterprise software contract in support of DIMHRS (Pers/Pay) development (PeopleSoft USA, Inc). Developed RFP for developer/implementer contract.
  - Began Phase I (risk mitigation activities) for the developer/implementer contractor.
  - Updated and received approval for Milestone B Acquisition Strategy Plan.
  - Developed coordinated charter for deployment IPT that identified roles and responsibilities and included an initial draft matrix that included all functional requirements and responsible organization.
  - Began planning for Milestone B for second quarter FY 03.
  - Initiated the Comprehensive Analysis of the 21 personnel and pay functional business areas, identifying how commercial best practices can assist the Department in transforming the personnel and pay processes and those DoD requirements that must be added in order to meet mission requirements.
2. (U) FY 2003 PLAN: (50,115)
- Complete the Comprehensive Analysis of the 21 personnel and pay functional business areas, identifying how commercial best practices can assist the Department in transforming personnel and pay processes and those DoD requirements that must be added in order to meet mission requirements.
  - Develop the Concept of Operations and related doctrinal and training programs to support the testing and acceptance of the initial operating capability (IOC).
  - Obtain Milestone B program approval.
  - Support the selection of a Developer/Integrator for DIMHRS (Pers/Pay).
  - Design, develop, and begin developmental testing of the IOC of the integrated system to be implemented by the Army.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605014N Information Technology Development	PROJECT NUMBER AND NAME DIMHRS 63033		
<b>(U) B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	44.410	50.115	78.724	49.552
RDT&E Articles Quantity	1	1		
<div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>(U) FY 2004 PLAN: (78,724)</p> <ul style="list-style-type: none"> <li>- Complete and approve the Concept of Operations and related doctrinal and training programs to support the testing and acceptance.</li> <li>- Validate and approve DITSCAP compliance.</li> <li>- Obtain Milestone C approval for the Operational Test and Evaluation of the IOC.</li> <li>- Initiate the design and build/development of subsequent Useful Assets for Navy, Marine Corps, and Air Force.</li> <li>- Begin deployment of the IOC.</li> <li>- Obtain Milestone B for Useful Assets 2-4.</li> </ul> <p>(U) FY 2005 PLAN: (49,552)</p> <ul style="list-style-type: none"> <li>- Conduct a Post Implementation Review of the Army IOC to measure and validate performance and benefits realization.</li> <li>- Deploy subsequent Useful Assets for the Navy and Air Force.</li> <li>- Conduct Operational Test &amp; Evaluation for Useful Assets 2-4.</li> <li>- Obtain Milestone C for Useful Assets 2-4.</li> <li>- Begin deployment of Useful Assets 2-4.</li> </ul> </div>				

R-1 SHOPPING LIST - Item No. 141

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>	0605014N Information Technology Development	DIMHRS 63033			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		44.534	51.297		
Current BES/President's Budget		44.410	50.115	78.724	49.552
Total Adjustments		-0.124	-1.182	0.000	0.000
Summary of Adjustments					
Section 8100: Business Process Reform			-0.205		
Section 8135: Economic Assumptions		-0.124	-0.288		
Section 8109: IT Cost Growth			-0.094		
Miscellaneous Department Adjustments			-0.595		
Subtotal		-0.124	-1.182	0.000	0.000
(U) Schedule:					
The delay in coordinating and receiving approval for the Acquisition Strategy Plan, Acquisition Program Baseline, Test & Evaluation Master Plan, and other Milestone B documentation has resulted in a delay of MS B from July 02 to February 03, approximately a 7 month slip. This delay of the Acquisition Plan also had an impact of releasing the RFP for the development contractor.					
(U) Technical:					
"Not Applicable."					

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2003</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605014N Information Technology Development	PROJECT NUMBER AND NAME DIMHRS 63033
---	--	---

**(U) D. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
2905 OPN	0	4.577	5.512	0	0	0.038	0.039	0.039	0	10.205

**(U) E. ACQUISITION STRATEGY: \***

DIMHRS (Pers/Pay) program goal is to deliver, via an evolutionary acquisition methodology, the functionality and capability described in the approved source documents at the best value to the Government, considering performance, life cycle cost, and program risk. The program is employing Government support for those activities that are inherently Governmental in nature, and is contracting with industry for those activities best executed commercially.

The JPMO will use full and open competition for awarding all DIMHRS (Pers/Pay) contracts. The JPMO has aggressively fostered competition via wide distribution of Requests For Information (RFI), Synopsis, Draft RFP, Industry Day meetings and one-on-one meetings with potential offerors.

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

R-1 SHOPPING LIST - Item No. 141

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605014N Information Technology Development			DIMHRS X3033						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											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	CPIF/AF	TBD, New Orleans, LA	6.858	26.988	10/02	27.190	10/03	17.325	10/04	Continuing	Continuing	
Software Development	FFP	PeopleSoft, Inc. Betheseda, MD	14.500	3.600	10/02	28.000	07/04				46.100	44.945
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			21.358	30.588		55.190		17.325		0.000	124.461	
Remarks:												

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-5</b>			0605014N Information Technology Development			DIMHRS 63033						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation		COMOPTEVFOR Washingto	0.165	2.100	10/02	3.200	10/03	3.200	10/04	Continuing	Continuing	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.165	2.100		3.200		3.200		0.000	8.665	
Remarks:												
Contractor Engineering Support	CPIFF/BOA	Science & Engineering Assoc	20.287							Continuing	Continuing	
Government Engineering Support	TBD	TBD New Orleans		13.527	10/02	16.334	10/03	25.027	10/04	Continuing	Continuing	
Program Management Support	CPIFF/BOA	Booz-Allen Hamilton, McLean, V	2.600	3.900	10/02	4.000	10/03	4.000	10/04	Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			22.887	17.427		20.334		29.027		0.000	89.675	
Remarks:												
Total Cost			44.410	50.115		78.724		49.552		0.000	222.801	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>											
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME 0605014N Information Technology Development								PROJECT NUMBER AND NAME DIMHRS 63033																			
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
<b>Acquisition Milestones</b>						MS B △					IOC MS C1 △				MS C2 △					FOC △															
Software 1XXSW Delivery 2XXSW Delivery						SDR									PIR																				
<b>Test &amp; Evaluation Milestones</b>																																			
Development Test											DT-B TECHEVAL					DT-C TECHEVAL																			
Operational Test							OT-B1				OT-B2					OT-C OPEVAL																			
<b>Production Milestones</b>																																			
LRIP I FY 05																																			
LRIP II FY 06																																			
FRP FY 07																																			
Deliveries																																			

R-1 SHOPPING LIST - Item No. 141

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

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-4a, Schedule Detail						DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
<b>RDT&amp;BA-5</b>	0605014N Information Technology Development				DIMHRS 63033			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	1Q-3Q							
System Design Review (SDR)	2Q							
Milestone II (MSII) MS B		2Q						
Contract Preparation		2Q						
Software Specification Review (SSR)		2Q						
Preliminary Design Review (PDR)		2Q						
System Development		1Q-2Q						
Critical Design Review (CDR)		2Q						
Quality Design and Build		3Q-4Q	1Q-4Q					
Test Readiness Review (TRR)			1Q					
Developmental Testing (DT-IIA)			3Q-4Q	1Q				
Eng Dev Model (EDM) Radar Delivery - Lab	NA							
Software Delivery 1XXSW			2Q-4Q	1Q				
Preproduction Readiness Review (PRR)			4Q					
EDM Radar Delivery - Flt Related	NA							
Milestone C (MS C) Fielding Decision			3Q					
Operational Testing (OT-B1)			2Q					
Start Low-Rate Initial Production I (LRIP I)	NA							
Software Delivery 2XXSW				1Q-4Q				
Developmental Testing (DT-B)			1Q					
Start Low-Rate Initial Production II	NA							
Operational Testing (OT-B2)				2Q				
Developmental Testing (DT-IIC)			1Q					
Functional Configuration Audit (FCA)						1Q		
Low-Rate Initial Production I Delivery	NA							
Physical Configuration Audit						3Q		
Operational Evaluation (OT-C) (OPEVAL)			2Q					
Low-Rate Initial Production II Delivery	NA							
IOC			3Q					
Full Rate Production (FRP) Decision	NA			3Q				
Full Rate Production Start	NA							
First Deployment			4Q					

R-1 SHOPPING LIST - Item No. 141

# UNCLASSIFIED

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>JANUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0605015N / Joint Military Intelligence Programs			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost (0605015N - E5CJ))	<b>5.918</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
53035 / Joint Counterintelligence Assessment Group	<b>5.918</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

**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.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>JANUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA - 5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605015N / Joint Military Intelligence Programs			PROJECT NUMBER AND NAME 53035 (E5CJ) / Joint Counterintelligence Assessment Group			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>5.918</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**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.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>JANUARY 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605015N / Joint Military Intelligence Programs	PROJECT NUMBER AND NAME 53035 (E5CJ) / Joint Counterintelligence Assessment Group		
<b>B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	5.918	0.000	0.000	0.000
RDT&E Articles Quantity				
<p>FY 2002 Program -- First year of R&amp;D support for this program:</p> <ul style="list-style-type: none"> <li>• Establishes the initial Initial Operational Capability (I2OC) site. I2OC provides a capability to exploit the JCAG tools and data in a classified operational environment, identifying Joint Counterintelligence Assessment Group (JCAG) system design and operational problems and solutions before IOC, respond to dynamic, real world tasking, and produce technology protection products.</li> <li>• Completes the design and build out of the IOC site.</li> <li>• Establishes JCAG IOC. Planned products include Horizontal Critical Technology Profiles, Horizontal Risk Assessments, and Tailored Information Products.</li> <li>• 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.</li> <li>• 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.</li> </ul>				

R-1 SHOPPING LIST - Item No. 142

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>January 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605015N / Joint Military Intelligence Programs	PROJECT NUMBER AND NAME 53035 (E5CJ) / Joint Counterintelligence Assessment Group			
<b>C. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2002	FY 2003	FY 2004	FY 2005
FY03 President's Budget		5.947	2.337	3.980	2.383
FY04 President's Budget		5.918	0.000	0.000	0.000
Total Adjustments		-0.029	-2.337	-3.980	-2.383
Summary of Adjustments					
JMIP Classified Program Transferred			-2.337	-3.528	-2.383
Economic Assumptions		-0.029			
Total Summary of Adjustments		-0.029	-2.337	-3.528	-2.383
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

R-1 SHOPPING LIST - Item No. 142

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>January 2003</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605015N / Joint Military Intelligence Programs			<b>PROJECT NUMBER AND NAME</b> 53035 (E5CJ) / Joint Counterintelligence Assessment Group				
<b>D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable	0	0	0	0	0	0	0	0	0	0
<b>E. ACQUISITION STRATEGY:</b>										
<p>DoD Data Analysis and Engineering Services Contract with Harris Technical Services Corporation (HTSC) provides analysis support of all source data and provides system design support to the data analysis function. GSA Contracts: Gray Hawk Systems Task Order provides Systems Engineering and Technical Assistance; Sytex Task Order provides systems development and engineering support; and Oracle Task Order provides technical research, development, and test support. The JCAG program follows a Systems Development Life Cycle methodology to ensure schedule, budget, technology insertion and risk mitigation goals are met utilizing existing GSA and DoD contract vehicles.</p>										
<b>F. MAJOR PERFORMERS:</b>										
New Effort - Unknown at this time.										

R-1 SHOPPING LIST - Item No. 142

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>January 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605015N / Joint Military Intelligence Programs			53035 (E5CJ) / Joint Counterintelligence Assessment Group						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys (01-02) Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Component Development	GSA	Unknown	5.918	0.000		0.000		0.000		0.000	5.918	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			5.918	0.000		0.000		0.000		0.000	5.918	
Remarks: Joint Counterintelligence Assessment Group RDT&E funding did not start until FY02, several contracts are pending with GSA at this time.												
Development Support											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	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>January 2003</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0605015N / Joint Military Intelligence Programs			53035 (E5CJ) / Joint Counterintelligence Assessment Group						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys (01-02) Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			5.918	0.000		0.000		0.000		0.000	5.918	
Remarks:												

R-1 SHOPPING LIST - Item No. 142

# UNCLASSIFIED

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

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>					R-1 ITEM NOMENCLATURE 0605500N MULTI-MISSION MARITIME AIRCRAFT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	<b>41.741</b>	<b>68.123</b>	<b>76.243</b>	<b>343.800</b>	<b>505.272</b>	<b>474.897</b>	<b>442.386</b>	<b>403.836</b>
H2696 MULTI-MISSION MARITIME AIRCRAFT	<b>41.741</b>	<b>68.123</b>	<b>76.243</b>	<b>343.800</b>	<b>505.272</b>	<b>474.897</b>	<b>442.386</b>	<b>403.836</b>

**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. Concept exploration activities began in June, 2000 under Program Element 0702207N / Project Unit W2737. Approval to enter Component Advanced Development was attained from the Overarching Integrated Product Team on 18 JAN 2002 and the Milestone Decision Authority (USD(AT&L)) approved the program Acquisition Strategy on 8 FEB 2002.

The primary objectives of CAD are to: refine system requirements, define system architectures for the alternative concepts, identify and mitigate concept risks, reconcile concept life cycle cost estimates and prepare for Milestone B. MMA plans to enter System Development and Demonstration (SDD) in the 2nd quarter of FY04 after completing the Milestone B Defense Acquisition Board. SDD effort will include: design, development and testing of Engineering Development Model aircraft, development and use of test articles (e.g., static, fatigue, Live Fire Test and Evaluation, wind tunnel test articles), the development of the aircraft avionics and mission systems, and development of the Systems Integration Lab.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	<b>41.741</b>	<b>68.123</b>	<b>76.243</b>	<b>343.800</b>	<b>505.272</b>	<b>474.897</b>	<b>442.386</b>	<b>403.836</b>
RDT&E Articles Qty					<b>1</b>	<b>1</b>	<b>1</b>	

**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. Approval to enter Component Advanced Development was attained from the Overarching Integrated Product Team on 18 JAN 2002 and the Milestone Decision Authority (USD(AT&L)) approved the program Acquisition Strategy on 8 FEB 2002.

The primary objectives of CAD are to: refine system requirements, define system architectures for the alternative concepts, identify and mitigate concept risks, reconcile concept life cycle cost estimates and prepare for Milestone B. MMA plans to enter System Development and Demonstration (SDD) in the 2nd quarter of FY04 after completing the Milestone B Defense Acquisition Board. SDD effort will include: design, development and testing of Engineering Development Model aircraft, development and use of test articles (e.g., static, fatigue, Live Fire Test and Evaluation, wind tunnel test articles), the development of the aircraft avionics and mission systems, and development of the Systems Integration Lab.



# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
<b>APPROPRIATION/BUDGET ACTIVITY</b> <b>RDT&amp;E, N / BA-5</b>	<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605500N MULTI-MISSION MARITIME AIRCRAFT	<b>PROJECT NUMBER AND NAME</b> H2696 MULTI-MISSION MARITIME AIRCRAFT		
<b>(U) B. Accomplishments/Planned Program</b>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	41.416	68.123	76.243	343.800
RDT&E Articles Quantity				
SDD Contracts	0	0	48.000	324.596
CAD Contracts	25.927	43.592	6.000	0
<p>Component Advanced Development (CAD) contracts to evaluate MMA system alternative concepts. Scope of effort includes: Designed MMA alternative concept's weapon system architectures. Technical, logistic, cost, and risk analysis of each proposed MMA alternative concept. Applied Modeling &amp; Simulation tools to validate proposed risk mitigations for each MMA alternative concept. Evaluated system requirements through cost/performance trade-offs analysis. Evaluate a unmanned aerial vehicle (UAV) in the maritime role (technical and cost analysis) and refine UAV system integration requirements and evaluate concept of operations.</p> <p>Provided engineering, management, and technical support for the MS B acquisition documentation, the AoA and the industry Component Advanced Development (CAD) studies.</p> <p>Initiate System Development and Demonstration (SDD) phase contract. Scope of effort includes: Develop MMA detailed design, avionics and mission systems, Systems Integration Lab(s) and test articles. Begin development of MMA avionics and mission systems, Systems Integration Lab(s) and test articles. Engineering and technical analysis support for SDD. Apply Modeling &amp; Simulation tools to assess proposed risk mitigations and to support Development Test and Evaluation.</p>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.325			
RDT&E Articles Quantity				
<div style="border: 1px solid black; height: 40px; width: 100%;"></div> <p>MMA Analysis of Alternatives.</p>				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT	PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT		
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>				
(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	53.329	74.531	218.861	198.566
Current BES/President's Budget	41.741	68.123	76.243	343.800
Total Adjustments	-11.588	-6.408	-142.618	145.234
Summary of Adjustments				
Congressional program reductions		-5.000		
Congressional undistributed reductions		-0.458		
Congressional rescissions	-0.229			
SBIR/STTR Transfer	-1.600			
Economic Assumptions	-0.127	-0.950	-1.830	-7.438
Reprogrammings	-9.632			
Reprioritization of requirements				
Other Navy/OSD Adjustments			-140.788	152.672
Congressional increases				
Subtotal	-11.588	-6.408	-142.618	145.234
(U) Schedule:				
Component Advanced Development contract award from 3Q/02 to 4Q/02; Milestone B DAB from 1Q/04 to 2Q/04; Preliminary Design Review from 3Q/04 to 1Q/05; System Development and Demonstration Phase Contract Award from 1Q/04 to 2Q/04. The following additions were made to the schedule: Critical Design Review 4Q/05; Milestone C - 2Q/08 based on initial input from Industry during CAD; the planned start of DT was moved to 4Q/07 to reflect Systems Integration Lab (SIL) testing; and Low Rate Initial Production Contract Award - 2Q/08 based on initial input from Industry during CAD.				
(U) Technical:				
Not Applicable				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>		
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> 0605500N MULTI-MISSION MARITIME AIRCRAFT				<b>PROJECT NUMBER AND NAME</b> H2696 MULTI-MISSION MARITIME AIRCRAFT			
<b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
APN BLI 019300 Inventory Sustainment							38.841	1412.273	21804.166	23255.280
APN BLI 060510 Initial Spares - MMA								48.799	1139.221	1188.020
<b>(U) E. ACQUISITION STRATEGY: *</b>										
<p>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. Approval to enter Component Advanced Development was attained from the Overarching Integrated Product Team on 18 Jan 2002 and the Milestone Decision Authority (USD(AT&amp;L)) approved the program Acquisition Strategy on 8 Feb 2002. 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 schedule after Milestone B is dependent upon alternative concept selected at the end of CAD. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance". The procurement of Engineering Development Model (EDM) aircraft from FY2004 to FY2006, delaying the Initial Operational Capability by two years to the FY2012-14 time period.</p>										

R-1 SHOPPING LIST - Item No. 144

# UNCLASSIFIED

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CR	TBD				48.000	02/04	324.596	01/05	1,667.804	2,040.400	2,040.400
Systems Engineering	C/FFP	Various	25.927								25.927	25.927
	C/FFP	Boeing		21.796	02/03	3.000	11/03				24.796	24.796
	C/FFP	Lockheed Martin		21.796	02/03	3.000	11/03				24.796	24.796
Subtotal Product Development			25.927	43.592		54.000		324.596		1,667.804	2,115.919	
Technical Development	WX	NAWCAD / NAWCWD		15.571	01/03	16.444	01/04	12.000	01/05	84.621	128.636	
Studies & Analysis	SS/FFP	CNA, VA	0.325								0.325	0.325
Studies & Analysis	C/FFP	Johns Hopkins Univ	2.240	2.200	01/03	1.100	01/04				5.540	5.540
Studies & Analysis	C/FFP	TBD						2.224	01/05		2.224	2.224
Integrated Logistics Support	WX	NAWCAD, Pax River, MD	0.600	0.600	11/02	0.600	11/03	0.600	11/04	4.200	6.600	
Configuration Management	TBD	TBD								5.000	5.000	
Technical Data	TBD	TBD								8.000	8.000	
Subtotal Support			3.165	18.371		18.144		14.824		101.821	156.325	
Remarks:												

R-1 SHOPPING LIST - Item No. 144

**UNCLASSIFIED**

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDTE, N / BA-5</b>			0605500N MULTI-MISSION MARITIME AIRCRAFT			H2696 MULTI-MISSION MARITIME AIRCRAFT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	TBD	TBD								326.000	326.000	
Operational Test & Evaluation	TBD	TBD								81.600	81.600	
Live Fire Test & Evaluation	TBD	TBD								37.000	37.000	
Test Assets	TBD	TBD								36.800	36.800	
Subtotal T&E			0.000	0.000		0.000		0.000		481.400	481.400	
Remarks:												
Contractor Engineering Support	C/FFP	RBC Inc., VA	1.910	2.000	01/03	2.300	01/04	2.300	01/05	16.100	24.610	24.610
Government Engineering Support	WX	NAWCAD, Pax River, MD	9.189								9.189	
Program Management Support	WX	NAWCAD, Pax River, MD	1.400	4.000	01/03	1.629	01/04	1.900	01/05	13.300	22.229	
Travel	WX	NAWCAD, Pax River, MD	0.150	0.160	11/02	0.170	11/03	0.180	11/04	1.290	1.950	
											0.000	
Subtotal Management			12.649	6.160		4.099		4.380		30.690	57.978	
Remarks:												
Total Cost			41.741	68.123		76.243		343.800		2,281.715	2,811.622	
Remarks:												

R-1 SHOPPING LIST - Item No. 144

Remarks:

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>										PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT										PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>	CAD DR ▲								MS B △												MS C △											
Acquisition Phases	Concept Exploration				Component Advanced Development				System Development and Demonstration																							
MMA System Dates are tentative; dependent upon concept selected													PDR △				CDR △								LRIP							
Contract Awards CAD SDD					△								△																			
<b>Test &amp; Evaluation Milestones</b>																																
Development Test Dates are tentative	DT																															
<b>Production Milestones</b>																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 144

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification										DATE: <b>February 2003</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>						R-1 ITEM NOMENCLATURE <b>NSIPS Dev/Mod 0508713N</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	5.917	11.360	12.507	4.653	4.393	4.130	4.155	3.851	4.032	Continuing	Continuing
<b>COMNAVRESFOR 62908</b>	5.917	11.360	12.507	4.653	4.393	4.130	4.155	3.851	4.032	Continuing	Continuing
											0.000
											0.000
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											0
<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>                  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 will be focusing on Web enablement and the emergence as the single authoritative personnel database for the Navy. This will support migration to DIHMRS.</p> <p><b>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</b>                  This program is funded under SYSTEMS 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. 145

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>February 2003</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>		PROGRAM ELEMENT NUMBER AND NAME <b>NSIPS Dev/Mod 0508713N</b>				PROJECT NUMBER AND NAME <b>COMNAVRESFOR 62908</b>					
COST (\$ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Project Cost	5.917	11.360	12.507	4.653	4.393	4.130	4.155	3.851	4.032	Continuing	Continuing
RDT&E Articles Qty											0

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

Navy Standard Integrated Personnel System (NSIPS) is an automated information system designed to collect the personnel and pay data for all Navy members. It will incorporate the personnel and pay functionality of many Navy systems into an integrated Navy personnel and pay system for active duty, reserve, and retired personnel. NSIPS will interface with DJMS for pay functionality.

Presently the Navy has several personnel and pay systems supporting various groups, located in assorted geographic areas, and based on different technologies. Among these systems are the following legacy systems that will be replaced by NSIPS: Source Data System (SDS); Diary Message Reporting System (DMRS); Reserve Standard Training, Administration, and Readiness Support (RSTARS); and; Uniform Microcomputer Disbursing System (UMIDS).

The transition from reserve to active status is not efficient or effective because the field pay and personnel systems for the active and reserve members interact only through cumbersome interfaces at the corporate level. The process is prone to mistakes and is time consuming. NSIPS will improve transaction processing, providing a faster, more accurate and easier to use system. In doing so, the system will replace the four legacy systems and reduce the costs associated with system maintenance and hardware upgrades. The NSIPS data elements are being continually submitted to Office of the Secretary of Defense for standardization, allowing for more precise and accurate reporting of personnel and pay data. NSIPS will eliminate problems encountered during the mobilization or change in status of members. NSIPS will also provide the flexibility found in modern systems allowing the addition of functions as the need arises. It will permit interoperability with other Services' personnel and pay systems as well as allowing the user to create ad hoc reports for specific requirements. In summary, NSIPS will provide the Navy with a comprehensive and reliable personnel and pay management system that meets the present and future needs of the Navy.

No new technology will be developed specifically for NSIPS. NSIPS will use Commercial-off-the-Shelf (COTS), Human Resources software as the foundation for the software development effort. NSIPS will use COTS hardware and existing Navy and DoD data processing and communications infrastructure to the maximum extent possible. In particular, NSIPS will integrate its design requirements with the IT-21 and Navy Marine Corps Intranet initiatives to fully exploit these initiatives and their infrastructures. Sites without the required infrastructure will have resources provided by either the NSIPS Program, the host activity, or another DoD/DON agency.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2003</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>NSIPS Dev/Mod 0508713N</b>	PROJECT NUMBER AND NAME <b>COMNAVRESFOR 62908</b>

**(U) B. Accomplishments/Planned Program**

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	11.360	12.507	4.653	4.393
RDT&E Articles Quantity				

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.

FY 2002 ACCOMPLISHMENTS: (\$11.360) Developed and tested final release and improvements to Release 1.0. Began the Electronic Service Record (ESR) and web enablement development.

FY 2003 PLAN: (\$12.507) NSIPS will be developing additional capabilities and enhancements and complete ESR development and implementation and web enablement.

FY 2004 PLAN: (\$4.653) Enhancement development will continue along with development of the NSIPS data base as single source personnel authority.

FY 2005 PLAN: (\$4.393) Continue enhancement and database refinement.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2003</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME <b>NSIPS Dev/Mod 0508713N</b>	PROJECT NUMBER AND NAME <b>COMNAVRESFOR 62908</b>			
<b>(U) C. PROGRAM CHANGE SUMMARY:</b>					
(U) Funding:		FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:		12.626	12.798	0.000	0.000
Current BES/President's Budget		11.360	12.507	4.653	4.393
Total Adjustments		-1.266	-0.291	0.000	0.000
Summary of Adjustments					
Section 313, PL 107-206: Revised Economic Assumptio		-0.028	0.000		
Section 8100: Business Process Reform		0.000	-0.051		
Section 8135: Economic Assumptions		-0.035	-0.072		
Section 8109: IT Cost Growth		0.000	-0.024		
Section 8029, PL 107-248 FFRDC Reduction		0.000	-0.008		
Miscellaneous Navy Adjustments		-1.203	0.000		
Miscellaneous Department Adjustments		0.000	-0.136		
Subtotal		-1.266	-0.291	0.000	0.000
(U) Schedule: Not Applicable.					
(U) Technical: Not Applicable.					

R-1 SHOPPING LIST - Item No. 145

# UNCLASSIFIED

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2003</b>																									
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, N / BA-5			<b>PROGRAM ELEMENT NUMBER AND NAME</b> NSIPS Dev/Mod 0508713N			<b>PROJECT NUMBER AND NAME</b> COMNAVRESFOR 62908																										
<p><b>(U) D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2002</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2003</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2004</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2005</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2006</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2007</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2008</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>FY 2009</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>To Complete</u></th> <th style="text-align: right; border-bottom: 1px solid black;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BLI 3306 NSIPS</td> <td style="text-align: right;">14.106</td> <td style="text-align: right;">5.489</td> <td style="text-align: right;">0.363</td> <td style="text-align: right;">0.294</td> <td style="text-align: right;">5.134</td> <td style="text-align: right;">5.244</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">30.63</td> </tr> </tbody> </table> <p><b>(U) E. ACQUISITION STRATEGY: *</b></p> <p>The NSIPS acquisition strategy is to utilize existing ID/IQ contracts that provide products that comply with the Defense Information Infrastructure Common Operating Environment (DII COE) and Global Command Support System (GCSS) initiatives and offer best value to the government. Multiple vehicles may be used to access required support and COTS hardware/software. Other NSIPS contracts include development, test, and management support services. The scope of work is described in general terms and obligates the contractor to devote a specified level of effort for a stated time period. Task renewal for further periods of performance may involve new cost and fee arrangements. To reduce administration of tasks in acquisition Phase II, the PMO executing Basic Purchasing Agreements to the General Services Administration (GSA) Federal Supply Schedules (FSS) for contractors used to support other efforts and requirements for training, testing, and PMO support not performed by the prime software development contractor. The NSIPS program office, using a primary software development contractor (Lockheed Martin) is executing software development through a cost plus fixed fee type contract. Program Office support is obtained using existing GSA contracts and contracts awarded through SPAWARSSYSCOM. Hardware is obtained using existing SPAWARSSYSCOM Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts.</p>   <p>* Not required for Budget Activities 1,2,3, and 6</p>											<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI 3306 NSIPS	14.106	5.489	0.363	0.294	5.134	5.244	0	0	0	30.63
<u>Line Item No. &amp; Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>																						
BLI 3306 NSIPS	14.106	5.489	0.363	0.294	5.134	5.244	0	0	0	30.63																						

R-1 SHOPPING LIST - Item No. 145

# UNCLASSIFIED

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>NSIPS Dev/Mod 0508713N</b>			<b>COMNAVRESFOR 62908</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	CPFF	Contractor, ITC New Orleans	5.917	1.495	10/02						7.412	
Training Development	CPFF	Contractor, ITC New Orleans		0.250	10/02						0.250	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			5.917	1.745		0.000		0.000		0.000	7.662	
Remarks:												
Development Support											0.000	
Software Development	CPFF	Contractor, ITC New Orleans	11.360	10.762	10/02	4.653	10/03	4.393	10/04	Continuing	Continuing	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			11.360	10.762		4.653		4.393		0.000	31.168	
Remarks:												

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2003</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			<b>NSIPS Dev/Mod 0508713N</b>			<b>NSIPS Dev/Mod 0508713N</b>						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											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	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			17.277	12.507		4.653		4.393		0.000	38.830	
Remarks:												

R-1 SHOPPING LIST - Item No. 145

# UNCLASSIFIED

**Exhibit R-3, Project Cost Analysis**  
(Exhibit R-3, page 7 of 9)

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: <b>February 2003</b>								
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>								PROGRAM ELEMENT NUMBER AND NAME <b>NSIPS Dev/Mod 0508713N</b>								PROJECT NUMBER AND NAME <b>COMNAVRESFOR 62908</b>																
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>					MS III IOC	FOC																										
<b>Test &amp; Evaluation Milestones</b>																																
Development Test		<input type="checkbox"/>	TECHEVAL																													
Operational Test			<input type="checkbox"/>	OPEVAL																												
Deliveries																																

R-1 SHOPPING LIST - Item No. 145

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

# UNCLASSIFIED

